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PTOLEMY'S MAPS
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PTOLEMY'S MAPS OF NORTHERN EUROPE

A RECONSTRUCTION OF THE PROTOTYPES

BY

GUDMUND | SCHÜTTE
PH. D.

PUBLISHED BY

THE ROYAL DANISH GEOGRAPHICAL SOCIETY



KJØBENHAVN · COPENHAGEN
H. HAGERUP · PUBLISHER

TO VNU
AMPHILAD

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G 87
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538
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EDITORIAL NOTICE.

IN 1911, the *Carlsberg Fund* granted to the author of the present work a subsidy for the elaboration of a work dealing with Danish geography from an ethnic point of view, to be published by the Danish *Society for Teutonic Philology* (Selskab for germansk Filologi). In 1912, however, this Society ceased to exist, the *Royal Danish Geographical Society* taking its place as editor of the work. At the same time, the subject was altered so as to embrace the Ptolemaic geography of northern Europe, while the subsidy granted for the elaboration was employed for the publication.

The author's studies have also been subsidised by the *Royal Danish Academy of Sciences*.

The blocks of most of the accompanying figures have been kindly lent by the Editor of the *Scottish Geographical Magazine*.

S-23969



TO

PROFESSOR JOS. FISCHER S. J.

THIS BOOK IS

GRATEFULLY DEDICATED



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PREFACE.

PTOLEMY'S Geography, and the "Germania" of Tacitus, form the main foundation of our knowledge concerning the barbarian north of Europe in classical times. It might be taken for granted that such extremely important documents and their sources had long ago been seriously examined. But the Ptolemaic description of northern Europe is still practically a "terra incognita".

The present book is an attempt to supply the wanted research. It is based upon studies which have been carried on for many years.

Our principal investigations concerning the different prototypes of Ptolemy's maps were already made 20 years ago, so the publication can scarcely be called precipitate.

Of course, we do not pretend to have solved one half of the riddles offered by our complicated problem. If Ptolemy's Geography were to be examined thoroughly, it would take a lifetime, but as we have made some observations which at any rate shed a new light on several points, we thought it wiser to make an end of hesitation. For even if further delay might have led to still better results in certain details, the study will be more profitably advanced by subjecting our preliminary observations to revision by expert critics.

The publication of a provisional study may possibly still be objected to by scrupulous philologists, but the undertaking certainly assumes a very different appearance, when we regard it from the geographical or ethnological point of view.

Geographers and ethnologists, far from fearing the absorbing philological problem, have used Ptolemy's work as the foundation for large reconstructions, and still do so. We may name numerous publications

from later years, containing either entire reconstructions of Ptolemy's Atlas, or detailed statements based upon his work. E. g.:

Müllenhoff's "Deutsche Altertumskunde", vol. II, with map designed by H. Kiepert 1887, republished 1906.

Gerland, "Atlas der Völkerkunde" (Berghaus, "Physikal. Atlas", 3. ed.) 1892.

Perthes, "Atlas antiquus", by A. v. Kampen 1892, 9th ed. 1916.

Müller's edition of Ptolemy, vol. III, atlas, 1901.

v. Erckert, "Wanderungen und Siedelungen", 1901.

Meyer's "Konversationslexikon", map of Germania designed by K. Wolff, 1904.

M. Schönfeld, "Wörterbuch der altgermanischen Personen- und Völkernamen", in Streitberg's "Germanische Bibliothek", 1911.

R. Kiepert, "Formae orbis antiqui"; e. g. reconstructed Ptolemaic map of Europe (1911) and map of Germania (1914).

We may specially mention the latest publications of ethnological compendia.

Caspar Zeuss, "Die Deutschen und die Nachbarstämme", 1st ed. 1837, republished 1903 (unaltered).

O. Bremer, "Ethnographie der germanischen Stämme" in Paul's monumental manual "Grundriss der germanischen Philologie", 1899, republished separately 1905.

In all these publications, Ptolemaic data are used as a basis without any serious attempt to solve the philological problem. In order to prevent scientists from continuing such a proceeding, it is not merely allowable, but *necessary* to publish the results of a research in which the attempt is at any rate made, — whether the outcome is satisfactory or not.

The necessity of revising the traditional ideas about classical geography is specially urgent within the region of the author's native country, i. e. Denmark.

Although Ptolemy's work offers an attractive base for such a study, it has, since the middle of the 19th century, been lamentably neglected. This neglect principally concerns the much discussed problems, as to

whether the classical Cimbri, Charudes, and Anglii, are to be identified with the modern Jutlandic populations of Himmerboer, Hardboer, and Angelboer, — or whether they are to be placed somewhere in Germany south of the Elbe. Of late years, several authors have published very learned researches dealing with the matter, e. g. in Germany Müllenhoff, in Sweden Erdmann, in England H. M. Chadwick and R. W. Chambers. But none of these authors has ventured upon examining the prototypes of Ptolemy's map in detail. As such important problems concerning the past of the Danish and English peoples could not be treated in a satisfactory manner, while Ptolemy's map remained an unexplored labyrinth, we subjected classical Jutland to a special study, and this became the nucleus of the present work.

Originally, it was our aim to write a compendious introduction concerning the question of text criticism. We also published some provisional sketches in "The Scottish Geographical Magazine", February and June 1914, and in Paul & Braune's "Beiträge zur Geschichte der deutschen Sprache und Litteratur", Vol. 41, 1916, at the same time anticipating our main results concerning the prototypes of Ptolemy's Atlas. Cf. our article in the "Saga Book of the Viking Society", 1913, Vol. VIII, part I, and in the "Mitteilungen zur Geschichte der Medicin und der Naturwissenschaften", 1914, Vol. XIII, No. 5.

On further consideration we found it inadvisable to publish in one volume a detailed MS. criticism and a detailed investigation of cartographic prototypes. The problem of text criticism is so complicated as to require a separate volume. After being introduced into this dangerous labyrinth, the reader would scarcely retain sufficient energy to venture upon the equally absorbing task of tracing Ptolemy's cartographic scheme.

In addition, the state of general European warfare prevented us from carrying on our text studies in the countries where the Ptolemaic MSS. are preserved.

We therefore resolved to publish our studies of Ptolemaic text criticism occasionally, whereas we limit the present volume to the cartographic problem. It will merely be introduced by a paragraph which briefly sums up the main points of the text question.

Fortunately enough, a lately discovered MS., the Urbina 82, pre-

serves the Ptolemaic atlas in a state which must be called excellent. Trusting the evidence of the greatest Ptolemaic MS. experts, — e. g. Prof. Jos. Fischer — we have based our studies firstly and mainly on this document which outweighs most other existing representatives of the famous classical geographer's work. Critics may object to our proceeding, but it is at any rate a simple and practically justifiable expedient during the present difficult conditions of text research.

Readers of our previous articles will notice that our theories have in some respects undergone a radical revolution. The complete reversal of some theses may seem startling and at the first sight cause the impression of "vestigia terrent". — In an unexplored field of study it is, however, impossible for a pioneer to avoid some serious mistakes. Any conceivable possibilities must be taken into account, simply for argument's sake. A number of them which have at first seemed satisfactory will, in the long run, prove misleading, but yet they have fulfilled a mission, namely that of contributing to the exhaustive discussion of our problem.

The term "Gothonic" is in this work used instead of the synonymes "Teutonic" and "Germanic" which are unpractical because of their ambiguity. Cf. Th. de la Saussaye, "The Religion of the Teutons" p. 79, — and Axel Olrik, "Arisk og Gotisk" ("Danske Studier" 1916). "Germanic" which is nowadays adopted by several English scientists, is especially bad, for it has no less than 11 or 12 different significations, and the English substantive "Germans" can only mean "inhabitants of Germany"¹⁾. Cf. our treatise "Gothonic Names" in the "Publications of the

¹⁾ We have only noticed two exceptions, namely Chambers, "Widsith", where the Scandinavians are called "North-Germans", etc. (p. 157); and Stjerna's "Essays on Beowulf", transl. by Clark Hall.

Society for the Advancement of Scandinavian Study", December 1912 (Urbana, Illinois), and our article "Germaner" in Rørdam's "Illustreret Konversations-Lexikon" (Hagerup), where the different significations are pointed out. — The term "ethel Gotena" — "nobility of Goths" — is used already in Old English in order to express the flower of the Teutonic heroes, see Widsith, part III. In the Edda, and in other Old Norse traditions, "Gotnesk" was equivalent to "Gothonic", "Teutonic"; and "Got-thiod", i. e. "Gothic Nation", meant the whole of the Teutonic group. Cf. W. Grimm, "Deutsche Heldensage", 3rd. ed. p. 6: "Sehr natürlich hat die Edda hernach gothisch im allgemeineren Sinne genommen". — "Gothic" was used in the same collective sense by Icelandic, English, Dutch, Swedish, Norwegian, and Danish scientists from the 16th to the 19th century. This nomenclature is mentioned e. g. in the "Encyclopaedia Britannica", 9th ed., 1876¹). — We prefer the longer form "Gothonic" in order to avoid ambiguity.

We owe much valuable information to Professor J. L. Heiberg in Copenhagen, the editor of Ptolemy's "Syntaxis".

¹) Art. "English Language", by J. A. H. Murray, p. 391. "The Angles, Saxons and their allies belonged to the Teutonic or Gothic branch of the Aryan family, represented in modern times not only by the English and their colonies, but by the populations of Germany, Holland, Denmark and the Scandinavian peninsula . . . For more than 1000 years, the Teutonic or Gothic stock has been divided into three branches."

Art. "Goths", by E. A. Freeman, p. 847. "The name came . . . to be used as a philological or ethnological term; we heard of "Gothic nations", "Gothic languages" etc., meaning "Teutonic" in the widest sense. The name was also first scornfully, then respectfully, applied to a style of architecture which has some claim to be called Teutonic as opposed to Greek or Roman, but which has nothing whatever to do with the Goths as a nation".

The name "Gothic", meaning "Teutonic", is also mentioned in the 11th edition, art. "Teutonic Peoples" by H. M. Chadwick, p. 679.

We are especially indebted to the authority in the study of Ptolemy's MS. atlas, Professor Jos. Fischer S. J. in Feldkirch, who has most liberally allowed us to use his large material of MS. reproductions and whose information and suggestions have been a great help. We therefore dedicated the present volume to him, hoping that our theories may in some points contribute to the advancement of the highly interesting study which has been so greatly promoted by his efforts and achievements.

§ I. A BRIEF SURVEY OF THE MANUSCRIPT PROBLEM.

The study has until now been handicapped by the fact that the critics would not acknowledge the atlases of the Ptolemaic MSS. as directly derived from the author's original cartographic work. These atlases were regarded as reconstructions from the MS. text, executed possibly by the Alexandrine grammarian Agathodæmon in the 5th century, or even later, and consequently deemed unworthy of consideration.

We may name some of the critics who more or less distinctly share this view of the MS. atlas.

Fabricius, "Bibliotheca Graeca", III, p. 414.

Heinrich Kiepert, "Lehrbuch der alten Geographie", 1878, pag. 10.¹⁾

Berger, "Geschichte der griechischen Erdkunde".

—, "Die Grundlagen des Marinus-Ptolemäischen Erdbildes" (Berichte d. phil. hist. Cl. d. sächsischen Gesellsch. d. Wissenschaften". 1898, p. 87—143¹⁾).

Christ, "Geschichte der griechischen Literatur" (in Müller's "Handbuch der class. Altertumskunde", VII, p. 506), 1888.

Henry Zondervan, "Allgemeine Kartenkunde", 1901.

It may be added that the Russian scholar Kunik wrote to Kiepert on Jan. 7th 1892, directly drawing his attention to the atlas in the phototypic reproduction of the Athos MS., published by Sewastionow and Langlois in 1867. Kunik had noticed the great difference between this atlas and the reconstructed maps in Kiepert's *Atlas antiquus* and

¹⁾ In order to avoid misunderstanding, we may quote what K. Kretschmer says about Kiepert's and Berger's opinions, "Zeitschrift der Gesellschaft für Erdkunde zu Berlin", 1913, Heft 10, S. 28. He states, "dass H. Kiepert und H. Berger keineswegs den vorherigen Entwurf von Karten von seiten des Ptolemäus in Abrede gestellt haben; im Gegenteil, H. Kiepert sagt (Lehrb. S. 10) ausdrücklich, dass die Konstruktion der Karten dem daraus erst abstrahierten Text vorangehen musste. H. Berger bestreitet vielmehr, dass Ptolemäus die zuvor konstruierten Karten seiner "Geographie" als Illustration beigegeben habe, Ptolemäus wollte absichtlich keine Karten liefern".

thence concluded that Kiepert had either been unaware of the reproduction or that he — as an accurate critic — had put it aside on purpose, deeming it to be of little practical value¹). Kunik now wanted to know whether the Athos Atlas might be regarded as truly Ptolemaic or not.

Kiepert's answer is unknown, Roediger adds, but the later editions of his atlas do not seem to betray that he has in any way altered his previous opinions concerning the MS. atlases of the Ptolemaic Geography. Nor is any trace of an altered scheme to be found on the map of ancient Europe, designed by his son and editorial heir R. Kiepert in 1911 ("Formae orbis antiqui").

Thus the systematic ignoring of the Ptolemaic MS. atlases is shared by almost all scholars, including the latest editors of the text such as Wilberg 1838, Müllenhoff 1873, and C. Müller 1883—1901.

As late as 1914, K. Kretschmer finished an article thus: "We conclude that the MS. maps do not originate directly from Ptolemy, but at the best from Agathodæmon who lived after him"²).

A. Herrmann later has taken up Kretschmer's point and finally maintains: "One result has proved certain, — our basis is not formed by the MS. maps but by the eight books of the text. Only the exterior qualities can be illustrated by means of the atlases: they supply information concerning the number of maps designed by Marinus, and concerning the regions described by him, and they show the technical means by which the graduation and the mountains, rivers, and towns were represented. But wherever the positions of the points described and the forms of names are concerned — and that is finally our principal subject — the text and not the maps must be our guide"³).

We may point out some principal arguments of Kretschmer and other critics who maintain that Ptolemy is not the author of the MS.

¹) The letter is reprinted by Roediger in the Preface to the second volume of Müllenhoff's "Deutsche Altertumskunde", p. XV. Cf. the following sentences (our italics):

"Zu meiner Ansicht über die Welten war ich nach wiederholter Prüfung des Textes von Ptolemäus gelangt", Kunik writes. "Erst vor einigen Tagen kam es mir in den Sinn, die Karten zu befragen, welche im Athosmanuscript des Ptolemäus enthalten sind und von Sewastionow photographiert wurden (Geographie de Ptolemée, Reproduction photo-lithographique; Paris, Didot 1867). Ich wurde stutzig, als ich Karte LXXVI mit der Ihrigen verglich und kam endlich dazu, vorauszusetzen, dass Sie entweder die wenig verbreitete, teure Ausgabe von 1867 nie zu Gesicht bekommen, oder dass Sie als feiner Kritiker die Karten als wenig brauchbar bei Seite gelassen haben . . . Bei dieser Lage der Dinge halte ich es für das Beste, meine Zuflucht zu Ihnen zu nehmen, indem ich Sie um gütige Aufklärung über die Athoskarte No. 76 bitte. Darf man sie als eine Copie der von Ptolemäus selbst entworfenen Karte ansehen?"

²) "Die Ptolemäuskarten", in "Petermanns Mitteilungen", 1914, p. 142., cf. Kretschmer's statements in the "Zeitschrift des Vereins für Erdkunde zu Berlin", 1913, Heft 10.

³) "Marinus, Ptolemäus und ihre Karten", in "Zeitschrift der Gesellschaft für Erdkunde zu Berlin", 1914, No. 10.

atlases, cf. Dinse in "Zeitschr. d. Vereins f. Erdkunde zu Berlin", 1913, p. 745 seq.

Firstly, the conclusion is drawn from Ptolemy's own words in his Geography I, XVIII, 2, stating that repeated copying would always tend towards the deterioration of the maps. It is supposed that Ptolemy would in order to prevent such deterioration publish his geography in tabular form without maps.

Secondly it is urged that Ptolemy has in his geography laid stress on the conic projection as preferable to the cylindric, — but the atlases contain only one specimen of the former; the remainder are square maps, designed in the cylindric projection which was by Ptolemy characterized as inferior.

Thirdly, none of the MS. atlases are by the copyists attributed directly to Ptolemy, nor are maps designed by Ptolemy mentioned anywhere in classical or mediæval literature. On the contrary, several MS. atlases contain a notice attributing them to "Agathos Daimon", a mechanic in Alexandria. This author has again been identified with an Alexandrine grammarian Agathodæmon who lived in the 5th century A. D. — The authorship of Agathodæmon has been regarded as most conclusive, and declared to be quite irreconcilable with the assumption that the Ptolemaic MS. atlases could have been designed by Ptolemy himself.

The Ptolemaic MS. atlases have already been defended against the sceptics in 1822 by N. H. Brehmer, "Entdeckungen im Altertum", Heft I, p. 11, and in 1828 by Heeren, "De fontibus geographicis Ptolemaei" ("Comment. Gotting." VI, p. 66).

But it was not before the beginning of the 20th century that a more general reaction against the scepticism made itself felt.

Prof. Jos. Fischer S. J. in Feldkirch is the main upholder of the revised theory recognizing the better MS. atlases as true continuations of Ptolemy's own work. Whereas his predecessor C. Müller has made the greatest collective study of the context, Fischer has undertaken a corresponding collection of the MS. atlases in photographic reproduction, originating from more than 40 Ptolemaic MSS. The collection has been supported by the "Istituto Austriaco di studii storici". Fischer's provisional results are principally found in the treatises "Die handschriftliche Ueberlieferung der Ptolemäus-Karten" 1912, and "An Important Ptolemy Manuscript" 1913.

A report of Fischer's as yet unpublished results together with numerous individual observations is given by Paul Dinse, "Die handschriftlichen Ptolemäuskarten" ("Zentralblatt f. Bibliothekswesen" XXX, p.

results by a series of comparisons with the *Tabula Peutingeriana* and the insignia in the *Notitia Dignitatum*.

A regular scale of development may be observed, stage I with few pictorial elements and no living beings, stage II with a growing number of pictorial elements among which are some few living beings in repose, stage III with complete overgrowth of pictorial elements among which several living beings in movement. Within this perspective, the Ptolemaic MS. atlases distinctly occupy the oldest stage, whereas all other existing documents, dating from the 4th, 5th, and 6th cent. A. D., represent later developments. Cf. our treatises in "*The Scott. Geogr. Mag.*", Febr. and June 1914, and in the "*Mitteil. z. Gesch. d. Medicin u. d. Naturwiss.*", 1914, Vol. XIII, No. 5.

Our third question concerns the additional details — lines, vignettes, spellings and entire names — which do not occur in the Ptolemaic text. The figures of longitude and latitude leave sufficient room for individual variation, — e. g. Ptolemy represents rivers and mountain chains generally by the two terminal points only, whereas the lines between these extremities are left to the cartographer's divination. A reconstructor with a lively fancy might here introduce quantities of "naturalistic details" without directly destroying the traditional framework, as sometimes occurs in late mediæval MSS. The older MS. atlases, however, do not betray the slightest inclination of the cartographers towards using their liberty in an arbitrary manner. They represent features, it is true, which are not implied by the words of the text, but such additions are made on a limited scale and characterized by no divergence from the general scheme of the Ptolemaic work. We notice e. g. that the mountains and rivers of western Germany, as given by the *Cod. Urbinas 82*, are derived from a special map of Roman fortification lines, cf. § 21. — Another addition to the Ptolemaic scheme is the more specialised classification of towns: whereas Ptolemy distinguishes only two classes, the atlases add a third, as stated directly in the *Editio Romana 1478*: "*Urbes insignes, secunde urbes, terciæ urbes*"¹). The possibility is perhaps not excluded that the more detailed classification may have been a mediæval addition, but there are no obvious reasons supporting this suggestion and the distribution of classes II and III seems to point strongly towards tradition from ancient times. — Finally, we notice that the MS. atlases contain sometimes the more correct spelling or give entire names which are left out in the text.

Our main result may be expressed by the words of J. Fischer cited above with special reference to the maps of the *Cod. Urbinas 82*: "they . . . represent the maps designed by Marinus".

¹) Cf. J. Fischer, "An Important Ptolemy MS.", in the "*Catholic Hist. Records and Studies*", New York, 1913, p. 227.

As a matter of fact, the possibility — or even likelihood — of this explanation is admitted by those scholars who have lately denied Ptolemy's authorship. Kretschmer says in "Petermanns Mitteilungen", 1914, p. 142: "We cannot sans phrase deny the possibility that the maps in their fundamental elements may be traced back to ancient times and that they, like the text, have been preserved by steadily repeated copying". "Nobody denies . . . that Ptolemy must have constructed a cartographic prototype on the basis of the map of Marinus". Herrmann says, "Zeitschr. des Vereins f. Erdkunde zu Berlin", 1914 (Heft 10): "If we consider how much Ptolemy — even when attacking Marinus — depends upon the latter, we must take it for granted that those 68 maps for which the text gives instructions as to the method of design, are in reality nothing else but the maps of Marinus."

If this is admitted by the opponents, the reasons for further ignoring the Ptolemaic MS. atlases have practically been abandoned.

It remains but to add some few words concerning the MS. atlases regarded from the point of view of text editors. — This is one of those regions where the method of Ptolemy's sceptical critics appears in its most astonishing light.

These expert philologists profess to give the sum total of the divergent readings, known to them. Anxious to be exhaustive, they quote not merely the MSS. containing the original Greek text, but also Latin translations, and even printed editions from the 15th and 16th centuries. But *the readings of the MS. atlases are consistently ignored.*

In order to understand this system, we might naturally expect a chapter or paragraph tending to prove that the MS. atlases are later than the 15th and 16th century and contain a much inferior reading than do the first printed editions. But no such chapter or paragraph is found. The readings of the MS. atlases are simply ignored sans phrase!!

As the editors give no reasons, we must apply to expert palæographers such as Messrs. Krumbacher, Mercati, and Franchi (cf. Fischer, "Die handschriftliche Ueberlieferung der Ptolemäus-Karten", p. 228, and a letter from the late Dr. Bjørnbo, preserved in the Copenhagen University Library). To our surprise we learn here that there is no difference of age between the MS. texts and the accompanying atlases. The Laurentian. XXVIII, 41, the Mediolan. Ambrosian. 527, the Urbinas 83 and 82, the Fabritius fragm. in the Copenhagen Univ. Libr. — both texts and atlases —, would all have been executed about 1200, whereas the Athos MS. reproduced by Sewastionow and Langlois would be some 50 years later. The first named 5 MSS. are of a distinctly superior quality.

Our review of the present editorial standard consequently results in the following somewhat startling conclusion: superior MS. readings from

the 13th century have been ignored in favour of more or less corrupt readings from the 15th and 16th century printed editions!!

The discovery of such procedure cannot but gravely shake our confidence in the authority of the "expert" editors. The whole collection and verification of text material must be deemed not merely unsatisfactory, but utterly superficial.

The bad consequences of such false methods can soon be pointed out in detail.

The editions leave out names which are found in the atlases. According to Fischer, we miss e. g. Karkum, which is in the Urbinas 82 mentioned as an additional name of the town Babilon i Egypt. The possibility that the addition could be of mediæval origin is excluded because the vernacular Egyptian name Karkum vanished at the close of the Roman period.

Moreover, Ptolemy is repeatedly accused of corruptions which could have been amended by the aid of the atlases.

E. g. the Ptolemaic name of the present Tongern is given as Atukuton, and the corrected form Atuatukon is added "e conjectura". But the atlases of the Codd. Mediolan. Ambrosian. 527 and Urbinas 83 quite clearly write Atuatokon, which is consequently the true Ptolemaic reading.

In eastern Germania, the editions record a town Setuia. But the one class of MS. atlases write the name Artekuia (or Artekvia), and we shall show later on that an addition of both readings gives the correct Ptolemaic form *Arsekuia which is in reality a duplicate of the neighbouring Arsikua (or Arsikva). The evidence of the Artekuia-class of MSS. is highly valuable, as it unveils a sample of Ptolemy's well known duplicates, pointing towards the lost prototypes of his work. Without the help of the MS. atlases we should never have recognized Setuia as duplicate of Arsikua.

The above consideration radically alters the valuation of the material for examining the Ptolemaic cartography.

This altered view would still be of relatively little import, if our aim were to analyze Ptolemy's work in its most minute local details. Then we should still be obliged to fix the position of any mountain, river or town by means of the longitude and latitude indicated in the text, and we should have to discuss the complicated questions of text genealogy in order to make our choice between the divergent figures.

We do not however aim at such gigantic research. The results would

hardly be worth the trouble, — at least so far as Germania or Sarmatia are concerned —, for in these and other parts of the ancient barbarian world, one half of Ptolemy's "exact" astronomic definitions are pure fiction.

Our task is only to furnish some preliminary observations, in order to prepare a methodical investigation of Ptolemy's lost prototypes from a cartographic point of view. And for this purpose, the hitherto accessible material seems to be sufficient.

We agree with C. Müller and Mommsen who state that the Codex Vaticanus 191 is the most valuable of all context MSS. Cf. the treatises of the two said authors in the periodical "Hermes", Vol. XV.

As to the MS. atlas, the approximate agreement of its best representatives may be regarded as a trustworthy guide.

According to Jos. Fischer, the MS. atlases are divided into two versions, one with 27 maps, and one with some 68. The 27 version corresponds to C. Müller's "Byzantine Family" of context MSS., and its main representatives are the Cod. Urbinas 82, the Cod. Athous Vato-pediensis (Athos Atlas), and the Venetus Marcianus 566¹). The 68 version corresponds to Müller's "Asiatic Family", and its main representatives are the Laurentianus Pluteus XXVIII, 79, the Mediolanus Ambrosianus 527, the Urbinas 83, and the Burney 111, 28.

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The fact that only the Athos copy of the MS. atlas has hitherto been reproduced, caused us first to use this document as a cartographic basis of our investigations. We attached considerable value to the following details: 1. the design of German mountains; 2. the representation of the river Loire (as touching the city of Orleans); 3. the representation of Scandinavian coasts; 4. the colouring, separating the Cimbric Chersonese and the Scandian islands from Germany; 5. the occurrence of a duplicate of the name Asanka in Bohemia. Cf. our paper "Une carte du Danemark, agée de 1900 ans", in the periodical "Le Danemark" Nov. 1912.

Later, we were informed by Jos. Fischer that the reproduction of the Athos Atlas is all but reliable, and that the original MS. itself is executed in a careless manner, forming no solid basis for conclusions. As to the duplicate of Asanka, it is not found in any of the other MS. atlases and consequently cannot be regarded as truly Ptolemaic.

Thus we had to discard a series of wrong presumptions and to accept rather the Codex Urbinas 82 as our principal basis.

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¹) Cf. C. Müller's treatise in the "Archives des missions scientifiques et littéraires", 1867.

But this changed valuation of MSS. has not altered our theories concerning the assumed Ptolemaic prototypes. As a matter of fact, the change was but little, because the Athos Atlas and the Urbinas 82 belong to the same group of MS. atlases, the version with the 27 maps.

Generally speaking, our reconstructions of prototypes remain unaffected. The doubts concerning the reading of several names are scarcely of any import to these theories.

Far from fearing that new discoveries within the text study will shake our prototype theories, we believe rather that the latter will prove a practical means of ascertaining the preferable texts.

§ 2. PTOLEMY'S PREDECESSORS IN THE FIRST CENTURY A. D.

The political centralisation of the classical world within the Roman Empire led directly to a corresponding centralisation of the geographical and statistical studies. About the beginning of the Christian era, great activity was displayed in chronicling the sum total of acquired knowledge, both from the well known Mediterranean shores, and from the recently conquered reigns in the far North and East.

The Imperial family played an important part in this activity.

M. Vipsanius Agrippa, the son-in-law of Augustus, wrote statistical "Commentaries" and designed a map of the world which was finished between 27 and 20 B. C.

The Emperor Augustus himself also contributed greatly to the organisation of statistical and geographical studies. It is well known from the Bible that he arranged the first world-census in Europe; this occurred in the birth-year of Christ. Seven years previously, a revision of Agrippa's map of the world had been undertaken in Rome by order of Augustus. The Imperial map thus constructed was of colossal size and painted in bright colours. Copies seem to have been placed in several provincial towns.

The classical geographers Strabo and Pliny are our main authorities concerning the above-mentioned undertakings of Agrippa and Augustus. Cf. the special literature, quoted by O. Bremer in his "Ethnographie der germanischen Stämme" § 6.

The Imperial publication became the foundation of all subsequent maps of the world during the remaining period of antiquity and during the whole of mediæval times.

§ 3. MARINUS, PTOLEMY'S IMMEDIATE PREDECESSOR.

According to Ptolemy's Preface, his geography and atlas were directly based on a work of Marinus from Tyrus. This scholar, as an older con-

temporary of Ptolemy, must have lived in the first half of the second century A. D. Death overtook him before completing his work.

Ptolemy in ch. VI of the Preface characterizes his predecessor's work with the following words:

"Marinus from Tyrus appears to be the last of our contemporaries who carried on the study with great zeal. In addition to the older commentaries which had come to our notice, he has discovered several more. With great accuracy, he has investigated the works of nearly all preceding authors, subjecting them to reasonable emendations".

We agree with this statement of Ptolemy's, — as a matter of fact, Marinus must have been gifted with colossal energy in collecting. Ptolemy has only augmented his collections in some few regions, mentioned in Preface ch. XVII, viz.: the coasts of Africa, India and East Africa, the extreme East Asiatic port Cattigara, China, and the mercantile road from the silk-producing country to Palimbothra.

Ptolemy, however, felt obliged to criticize the scheme of Marinus in several respects: the emendations introduced were not sufficient and especially the square projection, used for constructing the maps, was not up to scientific requirements, cf. Preface ch. XVIII.

Still, as a matter of fact, the Ptolemaic maps have preserved this projection except one and as we have no reason for doubting their pertinence to Ptolemy's age we must assume that the criticized scheme of Marinus remained the basis of the completed atlas.

Taking for granted that the existing Ptolemaic geography and maps represent the unaltered work of Marinus, we must agree with Ptolemy's judgment that they betray a considerable want of critical talent.

Marinus was not gifted with great divination in interpreting the physical outlines of the original maps from which he constructed his own atlas. He often mistakes sea-coasts for rivers, and rivers for mountains, or mountains for tribes and so on. North is changed into west, and west into south, etc.

His philological capacity was still weaker. He was completely unable to read and interpret barbarian names from little known regions. When two of his prototypes had the same name spelt a little differently, he did not recognize the identity. Thus the same name may occur twice, thrice, and even four times on the maps.

As the maps of Marinus are now only preserved through the medium of Ptolemy's work, it is often difficult to distinguish to which author the various features are attributable. In the following research, we have therefore introduced the expression "the Ptolemaic constructor", as embracing both.

§ 4. PTOLEMY'S LIFETIME, IMPORTANCE, AND PRINCIPLES.

Claude Ptolemy in Alexandria succeeded in completing the unfinished work of Marinus towards the end of the second century. The publication of his *Γεωγραφικὴ ὑφήγησις* forms the culmination of classical geography, and with all its faults, it may be called the most colossal exploit ever achieved in geographical literature. It marks a new epoch in so far, as not only the description, but also the accompanying monumental atlas escaped destruction and has come down to posterity. And here, in contrast to the previous absolute want of cartographic relics, vast material for study is suddenly placed within our hands. For more than 1500 years, it was destined to remain unrivalled both in quantity and in quality. Since the beginning of the humanistic era, it dominated for centuries all construction of scientific maps.

The date of Ptolemy's birth and death is not recorded. He is known to have undertaken astronomic observations in Alexandria during the reign of the Emperors Hadrianus and Antoninus, more exactly between 128 and 151 A. D.¹). As Ptolemy's Dacian tribe-names Biessoi and Sabokoi with their surroundings re-appear only in the "Bellum Marcomanicum" of Julius Capitolinus, it is possible that Ptolemy lived to witness the beginning of the war against the Marcomans which was carried on from 166 to 180.

Ptolemy is known as the most famous astronomer of antiquity, though others more truly deserved the title.

In the Preface, he spends numerous chapters on correcting wrong astronomic principles and details in the collections of his predecessor Marinus.

In his own geography, Ptolemy relates the length of the midsummer day at numerous important points of the world. The atlas marks the places of observation by means of crosses, and by vignettes with towers. Physical outlines and even the tiniest boroughs are localised by longitude and latitude, so that we may reconstruct the atlas on the base of the text with relative exactness. In the atlas, the lines of longitude and latitude are designed in the most accurate manner, cf. Dinse's description. The towns of the most important countries are arranged by Ptolemy according to their pertinence to the respective tribal districts. Singularly enough, all islands except Great Britain escape this sort of ethnic classification. The atlas expresses the classification by means of ethnic signs²). Statistical signs—vignettes with towers or battlements or without

¹) See Heiberg's edition of Ptolemy's "Opera astronomica minora", Index p. 271, 273.

²) The signs seem to have occurred already in some original maps, cf. § 10, but their systematical introduction into the atlas seems to be due to Ptolemy.

either, distinguish 3 classes of towns: the "urbes insignes, secunde and tercię urbes"¹⁾).

The critical principles, enunciated by Ptolemy in the Preface, are praiseworthy, cf. especially chapter V.

"From the traditions of successive ages, which we have collected, it appears that many inhabited parts of our Continent have still not come to our notice, owing to the difficulty in exploring them. Whereas others are not duly described according to their real appearance, owing to the carelessness of those who received the information. Finally, several have now actually changed their appearance, owing to revolutions or transformations"

"The later times generally supply more accurate notice concerning all regions which are not fully known"

"Therefore it is generally necessary to pay attention to the latest records of our times. In our statements, we must observe what is recorded nowadays, and in ancient tradition we must discriminate between what is trustworthy and what is not".

Chapter IV points out that the reports of travellers are generally to be placed in the first rank. In Chapter XI, the incredulity of Marinus against traders is criticized.

In Book II, ch. I., Ptolemy declares that he does not take into account the "mixed stuff" (*τὸ πολύχρονον*) which the historians relate in describing the peculiarities of various nations, "except when some generally recorded detail requires an exact and reasonable statement".

Such were Ptolemy's principles. If those principles were carried out only halfway to their aim, a splendid work must have resulted. The question is now, how far Ptolemy succeeded.

There can be no doubt that the mere accomplishment of a work like Ptolemy's was a unique achievement.

And on several points, we may observe in practice the operation of his critical principles. In the north-western parts of his maps, there are very few anachronisms, such as *Alvion* ∅: *Albion* = Great Britain, borrowed from Pytheas (yet notice the present *Alban* = Scotland), or the presence of a "Rhenish Swabia", dating from Cæsar's times. In southern Sarmatia, Ptolemy's main prototype was a map, closely connected with the corresponding source of Pliny, and with abundance of antiquated Herodotian names. But Ptolemy has eliminated them all, except one, the tribe-name of *Bodinoi*. The same prototype was the first known document which correctly described the Caspian Sea as an inland water, and not as a gulf of the northern ocean. And this tremendous improvement on our geographical ideas was bequeathed to posterity

¹⁾ Cf. the *Editio Romana* of 1478. — J. Fischer, "An Important Ptol. MS.", p. 227.

through the sole medium of Ptolemy¹). On the *Tabula Peutingeriana* from the 4th century, again the old wrong scheme prevails.

So far Ptolemy's scheme deserves all praise.

But now we turn to his weak points which cannot escape notice.

Ptolemy may have been aware of his predecessor's low power of topographical and philological divination, but he himself was unable to introduce sufficient emendations. He could not discover the wrong interpretation of physical outlines, nor the regular presence of fancy duplicates or triplicates in most parts of Germany, Sarmatia, and Dacia. And even where Ptolemy actually improved the maps he did not follow a definite principle. It is probable that he scratched out antiquated names on the western and southern maps of Marinus, — e. g. it is almost certain that the southern part of Sarmatia Europæa with its multitude of Herodotian spectres recorded by Mela and Pliny was expurgated by Ptolemy in this manner. But why, then, did he not subject the northern part of Sarmatia to the same wholesome process of purgation? He has there tolerated a long series of those antiquated Herodotian names which were conscientiously eliminated in the regions directly contiguous with the Roman Empire. It is almost inconceivable that he should have been unable to recognize this piece of Herodotian geography, banished by Marinus to the Baltic shores but belonging in reality to the shores of the Black Sea. And one of the names concerned, Hippopodes = "Horsefoot-men", obviously betrays its fabulous nature. In other words, the whole mass is a most conspicuous sample of that "mixed stuff" which ought to be excluded, according to Ptolemy's own principles. Thus he cannot quite escape the suspicion of falsification: he seems to have tolerated the "mixed stuff" simply in order to fill out a peripheral area of which he really knew nothing. And if that is the case, Ptolemy may have proceeded similarly when he had to accept or reject the fancy duplicates and triplicates delivered by Marinus: he may have regarded the despised barbarian names as good enough to be used two or three times over in the philological bed of Procrustes, simply in order to fill out unsightly bare spots.

The scheme of Marinus, as delivered by Ptolemy, at any rate remained the most terrible chaos. The Ptolemaic maps of northern Europe and Asia have, to a great extent, become completely useless, as long as the chaos remains unexplored.

On such grounds, Müllenhoff in his "*Deutsche Altertumskunde*" III, p. 95 etc. denounces Marinus and Ptolemy emphatically, calling them "schlimmer als Poeten und Prunkredner", or the "Sudelköche" of ancient geography.

¹) Müllenhoff, "*Deutsche Altertumskunde*", II, p. 95.

The verdict is no doubt too hard. For, as we saw above, the bad qualities do not prevail in all parts of Ptolemy's atlas. And the arbitrary scheme of constructing maps re-appears in most other geographies of that kind down to modern times. But at any rate, Mühlhoff's verdict marks the culmination of classical geography in an impressive way. And the Ptolemaic faults have more or less completely spoiled the modern maps of classical Germania down to the year 1914.

§ 5. PTOLEMY'S SUCCESSORS.

After the time of Ptolemy, a continuous cartographic tradition can be traced, represented first by the *Tabula Peutingeriana* in the 4th century, the local insignia of the *Notitia Dignitatum* in the 5th, and the mosaic map from Madaba in the 6th. These documents are highly valuable in order to investigate the development of the Ptolemaic technique in several points. The general tendency of their development, however, is not an advance, but rather a retrogression.

The *Tabula Peutingeriana*, — our most famous relic of classical cartography after Ptolemy's atlas, — is a so-called "Itinerary". That is to say, it is a mere register of road-distances, meant for wrapping up and transporting in a traveller's bag, and therefore it has an extremely oblong shape which quite distorts the geographical forms, introducing "overlapping" or "telescoping". We may compare it with modern schematic railway-maps. Its constructor most likely would have been able to design a fairly good map of the world on Ptolemaic lines, — it only lay outside his intention to do so. This cartographer was again followed by numerous copyists and imitators; they soon surpassed him in arranging the whole world artistically according to their private imagination, but at the same time they lost the ability of constructing more accurate maps. Even if some of the same persons mechanically copied the Ptolemaic originals, it did not occur to their minds to continue on the lines indicated by such superior models.

In the same measure, as the art of exact cartography declined, the tendency towards introducing pictorial and phantastic elements increased, finally reducing cartography almost to a mere child's play. Cf. our article in "*The Scott. Geogr. Mag.*", June 1914.

Only the reproductions of Ptolemy's atlas remained free from the invasion of picturesque barbarism. At the same time, Ptolemy's mediæval copyists were free from critical ambition, contenting themselves with mechanical copying. It was reserved to the editors during the humanistic age, and to "critical" cartographers as late as 1914, to continue on the lines of Marinus—Ptolemy in the sense that they increased the confusion, instead of revealing and reducing it.

It was fortunate that the mediæval copyists so piously and modestly respected the character of the original atlas, avoiding alike picturesque fancies and would-be-critical emendations. Thus, throughout the middle ages, the classical work remained a traditional sanctuary, and it was handed down to us through manuscripts, the best of which contain hardly any deteriorations worth speaking of.

Taking it as a whole, we may say that these MSS. represent the Ptolemaic atlas in pure, undisturbed condition. The confusion, appearing on their maps, is only that which is due to the classical cartographers.

In the following paragraphs, we shall examine the various forms of this confusion.

§ 6. MISREADINGS OF LATIN FORMS.

In order to penetrate the Ptolemaic labyrinth we will begin with examining the different classes of prevailing misreadings or misconceptions.

The Greek constructor of the Ptolemaic atlas was not always successful in interpreting his Latin prototypes. His knowledge of Latin appears to have been rather inadequate.

Hermann Müller has revealed one really classical case¹). Ptolemy's list of Germanic towns begins with "Flëum, Siatutanda" on the Frisian coast. The exact position of Siatutanda is defined thus: 29°, 20' of longitude, 54°, 20' of latitude. The name Siatutanda sounds trustworthily "barbarian", at any rate unlike Latin. Still the whole is simply constructed from a passage in Tacitus' "Annals", IV, 72. It is here stated that the Roman general Olennius, fighting with some Frisian rebels, retires to the castle of Flevum. Then in 73 follows the sentence: "Apronius . . . exercitum . . . Frisiis intulit . . . , ad *sua tutanda* digressis rebellibus". "Apronius led the army against the Frisians, after the rebels had retired in order to protect their homesteads". — Now the riddle is solved: "Sia-tutanda" = "sua tutanda" = "protect their homesteads". A slight misreading, — a *u* read as an *i* —, and a wonderful barbarian place-name was ready, worthy of being fixed and defined on the scientific map with astronomical data and the rest of it. The town "Protect-their-homesteads" still decorates Spruner's "Atlas antiquus" of 1851, and learned critics earnestly discuss the possibility of its continued existence, — e. g. Ledebur re-discovers it in Utende at the river Sate²).

¹) "Marken des Vaterlandes" I, p. 114.

²) "Die Bructerer" p. 180. Both C. Müller, ed. of Ptolemy, I, I, p. 266, and Berger, "Gesch. d. Erdkunde der Griechen" III, p. 156, are sceptical against H. Müller's explanation but our supplementary observations will show that this is superfluous.

Other instances of misread Latin words or constructions have also been observed.

Marobudon, town near the Markomanoi, seems to be a castle of the Marcomannian king Marbod, originating from the "Annals" of Tacitus, II, 62: "Catualda, profugus olim vi Marobodui . . . , fines Marcomanorum ingreditur . . . irrumpit regiam castellumque juxta situm". "Catualda, who had been expatriated by the force of Marbod, attacks the frontier of the Marcomans and assails the king's palace and the neighbouring castle". See Müller's ed., I, I, p. 273.

The detection of these instances of manufactured geography leads us to expect more of the same nature, of which the following cases are examples.

Agrippinensis II, IX, 2 in Version I = Cologne is Colonia Agrippinensis, named after the Empress Agrippina who was born in the town. The Greek cartographer did not know that Agrippinensis is a mere adjective and therefore dropped Colonia, — that is to say: ignored exactly that half of the name which survives till our times.

In eastern Germany, Ptolemy has the following names of towns, written continuously in the context and also placed close by each other on the map:

Bunition	Virunon	Virition	Rugion	Skurgon
39° 30', 55° 30'	40° 30', 55°	41°, 54° 30'	42° 30', 55° 40'	43°, 55°

The forms Bunition and Virition might, perhaps, with some difficulty be explained as true Gothic names. But in western Germany we observe a town called "Munitio", — obviously a Latin "munitio", i. e. a Roman "fortress". And as Ptolemy often mutilates initial letters in the most unscrupulous way — this will be shown in § 7 — we can no more doubt that the "town" Bunition is the same "munitio" in Ptolemaic disguise, as C. Müller has already suggested. Most likely, it is again found in the third of the above-mentioned would-be-barbarian names, "Virition". The remaining three names would then most likely represent tribal denominations, to be connected with the fortresses. Bunition Virunon, read *Munitio *Virunôn, would be the "Fortress of the Virunoi", a tribe, mentioned by Ptolemy. Virition might be connected either with Rugion or with Skurgon: *Munitio *Rugiôn = "fortress of the Rugians", or "Munitio *Skirôn" = "fortress of the Skires".

The tribe-names Teutonoaroi Virunoi have puzzled scholars greatly. Müllenhoff in his "Deutsche Altertumskunde" II, 287, assumed that the monstrous form Teutonoaroi must be an arbitrary invention by a Roman geographer. But it is simply a Ptolemaic misunderstanding of a Latin correction. The prototype had the names written thus:

TEUTON VARI VIRUNI.

The letters "vari" simply meant an emendation, intending to re-establish the correct reading Varini instead of the arbitrarily distorted form Viruni, cf. § 20, g. Ptolemy however regarded "Vari" as the termination of "Teuton(i)", and thus the monstrous form Teutonoaroi resulted. It was built like secondary Latin forms such as Pictavarii, Andegavarii, Breonarii instead of Pictavi, Andegavi, Breuni, = the modern Poitiers, Angers, Brenner. — The fact that "Vari" could be interpreted as the ending of "Teuton" shows, that the prototype was written in Latin.

In Poland, there appears a Ptolemaic tribe with the Latin name *Transmontanoi (Codd. & atlas: Tranomontanoi). Müllenhoff, "Deutsche Altertumskunde" II, p. 84, identifies these people with the Transjugitani, mentioned by Ammianus Marcellinus XVII, 12, 12, and signifying some Dacian tribe north of the Carpathian mountains. But the Transmontanoi evidently belong to the tribal name of Koistobokoi, contrasting their northern branch with those Koistobokoi whom Ptolemy's map of Dacia places south of the mountains. Our cartographer here again did not notice the attributive meaning of a Latin word: out of the "*Coistoboci *transmontani", he constructed two separate tribes, the "Koistobokoi" and the "Tranomontanoi". (In the same way, he separated the "Bastarnai" from their alter-ego "Peukinoi".) The misreading *o* for *s* of course contributed greatly to this erroneous statement.

§ 7. MISREADINGS OF BARBARIAN NAMES.

It is extraordinary that a learned geographer, and a Roman citizen, could be so liable to misreading words written in the language of the Romans. But that he did so is undeniable, and this fact gives us a measure to judge how unscrupulously the Ptol. constructor must have treated barbarian names.

The conclusion is as evident, as it is important to our valuation of Ptolemy's orthography. Still nobody seems as yet to have made this observation. The philologists — it is true — sometimes distort Ptolemy's spellings in a scarcely less Procrustean manner, than the ancient cartographer did himself. The great linguist and ethnologist Zeuss e. g. alters "Daukiones" into "*Skandiones", "Rutikleioi" into "*Turkileioi" = the Turcilingi of the 5th century. He correspondingly alters "Veltai" into "*Letuai" = Lithuanians, and out of the Scandian "Leuonoi" Müllenhoff forms "*Kyenones" = "Quænes" (cf. § 27). The Lithuanians and Quænes are otherwise not mentioned in antiquity; nevertheless, Müllenhoff goes so far that he writes "Kyenones" in the Ptolemaic text of his "Germania antiqua", without warning the reader that it is a mere conjecture!

But the same philologists who venture upon such bold conjectures, often maintain that Ptolemy has in other points adhered rigidly to the original orthography. Whereas he is freely permitted to mutilate middle and final sounds, it is a general presumption that he has respected the initials in a way which might almost be called reverential. E. g., scarcely a single critic hesitates to amend "Busakteroi" into "Burakteroi", or "Kognoi" into "Kotinoi", — for here the initial sound is not affected. But many dare not with Zeuss correct the Jutlandic "Fundusioi" into "*Eudusioi" = "Eudoses" (Tacitus), and the etymology of "fund" gives rise to various speculations; Reichard connects it with the island of Funen, whereas another explains "Fundusioi" as a nick-name of the Eudoses: "Foundlings" instead of "genuine children"! Müllenhoff spends a whole portion of learned criticism on proving that Šafarik is mistaken when interpreting the Sarmatian "Stauanoi" as a distortion of "*Slauanoi" = Slavs.

This distinction between the primary and secondary place is mere fancy. It might have been justified, if Ptolemy — or his predecessor Marinus — had had the same philological training as his learned critics. But the same geographer who read well-known Latin words like the most ignorant of grammar-school pupils, would be hopelessly doomed to bewilderment, when faced with barbarian forms with which he was for the most part totally unacquainted. To him it was no matter of sounds or phonetics, — the barbarian names were letters only, — letters without sense and interest —, and the beginning was not a bit more protected against mutilation than the middle or the end. — If anything rather less.

To ignore this essential observation makes the treatment of the Ptolemaic orthography completely planless.

In order to demonstrate the corruption of Ptolemy's initial spellings we will instance some examples from Gaul.

The Gallic names, from Ptolemy's point of view, were barbarian, in as much as they were neither Latin nor Greek. But, as Gaul belonged to the Roman Empire, nothing could be easier than to ascertain the orthography of important names from that province. Nevertheless, Ptolemy's spelling of such names is often most cruelly distorted. Cf. the following list:

Ptolemy	Classical Orthography	Modern French Form
Patribatioi	Atrebatas	Artois, Arras
Samnitai	Namnetai (Ptol.), Namnetes	Nantes
Romandyes	Viromandui	Vermandois
Uessones	Suessiones	Soissons
Subanektoi	Silvanectes	Senlis (metathesis for *Selnis)
Dueona	Devona, Divona	Divonne

French is known as one of those languages, in which ancient words have been radically altered and mutilated. Still, it will be seen at the first glance that the modern French forms of the above names are generally much more to be trusted than the would-be-classical spelling in Ptolemy's Geography. This observation sheds valuable light on the situation within Gothic regions. We are entitled to expect the full analogy here, and we are dispensed of any reverence which would beforehand seem due to the "classical" authority.

The same observation is to be made regarding several of those authorities which we must use in order to verify Ptolemy's orthography. The works of Strabo and Tacitus often distort the Gothic names in exactly the same cruel manner; in their case, however, the distortions may be due rather to the copyists than to the authors themselves.

§ 8. THE "MILIEU" AS KEY TO INTERPRETING DISTORTED BARBARIAN FORMS.

To a great extent, the present Ptolemaic orthography of exotic barbarian names must be regarded simply as a field of ruins.

If, therefore, we examine each name separately, it would in many cases lead to nothing. Our chief key of identification must be a survey of the entire milieu.

If we take a whole series of names instead of the single ones, there is a certain amount of hope that we may solve the riddles. A skilful Procrustes may distort single names into complete obscurity, but he will rarely be able to do the same with an entire complexus of them, if he does not at the same time disturb their mutual order.

Let us for example take two of the above-mentioned questionable forms, Daukioness and Fundusioi.

Are we to follow Zeuss who upsets Daukiones into *Skandiones? Are we to defend the initial spelling fund?

The isolated criticism leads to no sure answer. But when we regard the entire milieu, things will look quite otherwise.

Among the Gothons, we know of nearly a hundred sufficiently verified tribe-names. Within this number, the initial sound Da occurs only once¹⁾; the same is the case with the termination dus: the nearest assonances, apart from the Eudoses, are the Helisii and the Hellusii (Tacitus). Now the only verified name on Da occupies exactly the place of the Daukiones, — it is the well known name of Danes. And the only verified name on -dus points strongly towards the neighbourhood of the Fundusioi: it is the tribe of Edusii (Eudures) = Eudoses, who

¹⁾ The Dandutoi Ptol. are not verified.

like the Fundusioi appear jointly with Charudes and Varines (Cæsar, Tacitus).

This verification is decisive. We learn that Daukiones are = Danes, and Fundusioi = Eudoses. It is not simply a suggestion. It is proved in the most strict philological sense of the word; otherwise, any evidence of combined geographical-linguistical reasoning would be worth nothing.

In the following paragraphs, we shall set forth several collective observations, which may assist us in tracing the various distortions of barbarian Ptolemaic names.

§ 9. THE CASE OF METATHESIS.

We have mentioned above that different authors assume quite radical metatheses: Daukiones < *Skandiones, Rutiklïoi < *Turkilïoi, Veltai < *Letuai (Zeuss). In all of these cases, the assumed "correct" form is a mere conjecture, not exemplified in classical times. In the case of Daukiones, the milieu undoubtedly proves that the conjecture is wrong. The same would be the case with the other assumed unnatural metatheses, but it would be a waste of time to show this.

There are many cases, however, where the assumption of metathesis is natural or necessary. We shall now register some of the most conspicuous cases.

Form with metathesis	Form without metathesis
1. Dueona, II, VII, 9	Deuona II, XI, 14
2. Atuakuton II, IX, 5, Version I (& Context)	Atuatokon II, IX, 5, Version II (Mediolan. Ambros. & Urb. 83)
3. Asbikurgion II, XI, 5 mountain, Version II (Laur. Plut., Med. Ambr., Burney)	Askiburgion II, XI, 10, mountain, Version I
4. Bikurgion II, XI, 14, "town"	Askiburgion II, XI, 10, mountain
5. Uispoi II, XI, 6	Usipi, Usipii
6. Kalukones II, XI, 10	Kathylkoi Strabo VII, p. 291 (i. e. *Kaukloi, "smaller Chauks")
7. Fabiranon II, XI, 12	Foro Adriani Tab. Peutung.
8. Robodunon II, XI, 15, Version I	Eburodunon BEGZ (Eburodanon ΣΦΨ, Reburodunon X)
9. Daros II, XV, 1	Dravus, the river Drau
10. Frugundiones III, V, 20	Burguntès II, XI, 8, Burgundiones Pliny
11. Reukanaloi III, V, 10	Roxolanoi III, V, 10

Form with metathesis

Form without metathesis

- | | |
|--|--|
| 12. Boruskoi III, V, 10 ¹) | Roboskoi VI, XIV, 9 (in Scythia) |
| 13. Mysaris III, V, 2 ¹) | Tamyrake III, V, 2 (Tamyrakis
Strabo VII, III, p. 19) |
| 14. Erkabon III, V, 13 ¹) | Sarbakon III, V, 15 |
| 15. Ratakensioi (Racatenses Ed. Ulm.)
III, VIII, 3 ¹) | Rakatai II, XI, 11 |
| 16. Potula(tensioi) III, VIII, 3 | Paloda (or Polonda) III, VIII, 4. |

The metathesis appears frequently, where there is a *K* or *G* in the name concerned. Cf. the following cases: 2. tok > kut. 3. kib > bik. 6. *ukl > ulk > luk. 10. urg > rug. 11. ksolan > kanal. 12. borusk > robosk. 13. rak > *kar > sar. 14. bak > kab. 15. kat > tak.

The inferior MSS. contain several more metatheses, e. g. Maktiadon ΣΦΨ instead of Mattiakon.

Müller suggests that Lakiburgion on the Baltic coast might be a distortion of the Rhenish name Askiburgion, but we are not able to discover a prototype to which we might ascribe this Baltic duplicate (or rather triplicate; the third copy of the name would be Askalingion). R. Much suggests the metathesis Melibokos II, XI, 5 > Melokabos II, XI, 14.

§ 10. THE CASE OF APOCOPE.

A frequent case of distortion is the loss of an initial letter or syllable which misfortune may easily happen to barbarian names. In Ptolemy's Geography, we notice the following cases, originating from Gaul, Germany, or Sarmatia.

- | | |
|-------------------------------------|---|
| 1. Romandyes II, IX, 6 | Viromandui (in Vermandois) |
| 2. Uessones II, IX, 6 | Suessiones (near Soissons) |
| 3. Metakon II, IX, 3 (Version II) | Nemetakon |
| 4. Bikurgion II, XI, 14 | Askiburgion II, XI, 5 (Askiburgion
Version II, see § 9). |
| 5. Setvia II, XI, 14 (Version II) | Artekvia II, XI, 14 (Version I) |
| 6. R(i)usiava II, XI, 14 | Biriciana (suggested by C. Müller
p. 274) |
| 7. Robodunon II, XI, 15 (Version I) | Eburodunon BEGZ (Eburodanon
ΣΦΨ, Reburodunon X) |
| 8. Chesinos III, V, 1 | Acesinus Pliny IV, 83 (sugg. by
Müller) |

*) Suggested by C. Müller.

- | | |
|-----------------------------|--------------------------------------|
| 9. Mysaris III, V, 2 | Tamyrake III, V, 2 (sugg. by Müller) |
| ✓ 10. Sturnoi III, V, 10 | Basternai III, V, 7 |
| ✓ 11. Exobygitai III, V, 10 | Hamaxobioi Skythai III, V, 7. |
| ✓ 12. Erkabon III, V, 13 | Sarbakon III, V, 15 |

In the case of Pagyritai III, V, 10, and Pasyris (*Pakyris), the apocope was already found in the prototype, cf. Pliny Pacyris IV, 84. In the case of Agaros potamos III, V, 4 = Sinus Saggerus IV, 82, it is Pliny who has erroneously added an initial *S*.

Numerous additional cases of apocope occur in the inferior MSS., especially $\Sigma\Phi\Psi$, e. g. Auxones = Saxones, Iadua = Viadua, Istulas = Vistulas, Ubanektoi = Subanektoi (Silvanecti), Erusioi = Nerusioi (Nervii), etc.

The apocope of *S* in Sussionses was most likely due to a misunderstanding of the system of ethnic signs before the names of tribes. On the original map used by Marinus or Ptolemy, the ethnic sign before Sussionses had disappeared, and consequently the initial *S* was regarded as ethnic sign. The result was the present form δ Uessones. Cf. our article in "The Scott. Geogr. Mag." Febr. 1914, p. 59.

§ 11. THE CASE OF PARASITICAL ADDITIONS.

We have noticed the following cases.

- | | |
|--|--|
| 1. Romorinôn II, IX, 1 | gen. plur. of Morinoi II, IX, 4 |
| 2. Patribatioi II, IX, 4 (Version I & Mediol. Ambr.) | Atribatioi II, IX, 4 |
| 3. Lugoï Didunoi II, XI, 10 | "town" Lugi-Dunon II, XI, 13 |
| 4. Fabiranon II, XI, 12 | F. Abiranon = Foro Adriani Tab. Peuting. |
| ✓ 5. Pasiakês potamos III, V, 4 | Axiakês potamos III, V, 14 |
| 6. Setuako-ton II, XI, 15 | Septemiaci VII on the Tab. Peuting. |
| 7. Teutonoaroi II, IX, 9 | *Teutoni-Varini = Teutones Auarpoi II, IX, 5 |
| 8. Ouisburgioi II, XI, 10 | Osi Buri ¹⁾ |
| 9. Exobygitai III, V, 10 | Hamaxobioi Skythai III, V, 7 |

In no. 1 & 2, the addition most likely was due to a misinterpreted ethnic sign before the names concerned.

The MS. atlases of Version I write $\begin{smallmatrix} \vee \\ \wedge \end{smallmatrix}$ Morinoi, whereas the duplicate name is written \bowtie Romorinoi. We suppose that the *R* originates from

¹⁾ See Ludw. Schmidt, "Historische Vierteljahrschrift" 1902, p. 80.

from the sign χ , whereas the following *o* originates from the point to the right of this sign.

The ethnic sign of Patribatioi is \vdash , which may have been misread for a Latin *P*.

In no. 3, Didunoi, the letters *di* are simply a misreading of the Greek article *οι*.

No. 6, Pasiakês potamos = Axiakês potamos is = P. Asiakês i. e. Potamos Axiakês, "the river A."

The addition *ton* in Setuakoton is caused by the Latin figure VII added after *Septimiako, cf. Septemiaci VII Tab. Peut.

The remaining four cases are additions of two separate names. Correspondingly, numerous MS. atlases (such as the Urbinas 82) write Protoisidones, originating from the expression of the context "protoi Sidones", i. e. "first the Sidones".

All context MSS. except Vatican 191 and the best representatives of Version II (Laur. Plut., Mediol. Ambros, Constantinop.) write Terakatriai, originating from *οί τε Ρακατρίαι και οί Ρακάται*, "both the Rakatriai and the Rakatai".

§ 12. THE CASE OF ONOMATIC DISGUISE.

The distortion prevailing in Ptolemy's barbarian names is in many cases of merely accidental nature. But in some cases, we observe the working of a general factor, the tendency towards "amending" the unknown forms after better known models.

The tendency generally has a centripetal direction, resulting in a so-called "nostrification". That is to say: the names from the far periphery are remodelled after those which occur within the Roman Empire, especially those from Italy or its neighbourhood. But sometimes it also occurs, that a name from the Empire is remodelled after a barbarian one from the far north; we might call this a "centrifugal disguise".

It is only the nostrification which plays a practical role. We may now give a list of the cases observed by us.

Ptolemy's spelling	The model, after which the name has been disguised	Real form
1. Samnitai Gaul II, 8, 6	Samnitai Italy III, I, 58 and island of Samnis near Britany, Pliny IV, 103	Namnetai II, VII, 8
2. Samnitai Scythia VI, XIV, 10	Samnitai Italy III, I, 58	Chainides V, IX, 17
3. Romandyes Gaul II, IX, 6	Romani? Italy	Viromandui

Ptolemy's spelling	The model, after which the name has been disguised	Real form
4. Nerusioi Belgium II, IX, 6	Nerusioi Italy III, I, 37	Nervii
5. Virunon Germany II, XI, 12	Virunon Noricum II, XIII, 3	*Varinon
Virunoi ibd. II, XI, 10	Virunon Noricum II, XIII, 3	Varini Tacitus
6. Kalukones Germany II, XI, 10	Kalukones Rhætia II, XII, 2	*Kauklones, cf. *Kaukloi, Strabo VII, 291
7. Lugidunon Germany II, XI, 13	Lugodunon Belgium (Leyden) II, IX, 1 Lugdunon Gaul (Lyon) II, XI, 12	*Lugoi Dunoi II, XI, 10
8. Karrodunon Vindelikia II, XII, 3	Karrodunon Bohemia II, XI, 14 Pannonia sup. II, XIV, 4	Parrodunum (inscr.)
9. Pataouion Pannonia II, XIV, 4.	Patauion (Platouion) Italy (Padova) III, I, 26	Poetovio (Pettau)
10. Alaunoi Sarmatia III, V, 7; Scythia	Alaunoi Noricum II, XIII, 2.	Alani

The centrifugal tendency appears more or less distinctly in the following cases.

Ptolemy's spelling	Model form	Real form
11. Semnonnes Italy III, I, 19	Semnonnes Germany (renowned tribe) II, XI, 8 & 10	Senones Gaul II, VIII, 9
12. Sudinoi Germany II, XI, 11 (Sudenoι ADMΞ)	Sudinoi Sarmatia III, V, 9 (tribe in Sudauen where the Roman merchants used to buy amber)	Sudeta ore, Germany (mountain) II, XI, 5 & 11

It is worth noticing that the nostrification Virunoi instead of Varinoi occurred already on an original map, used by the Ptol. constructor. It had been corrected by the addition of the letters "Vari" above "Viru-". Cf. § 6.

As the nostrification introduces in most cases forms from Italy or the Alpine districts, and betrays no corresponding inclination towards Greece, we may suppose that the Pre-Ptolemaic origin is the general rule. But the question cannot be settled without an examination of Ptolemy's entire work which we cannot undertake here.

§ 13. THE CASE OF MAKING FICTITIOUS REPETITIONS.

It is shown above that a contributor to the Ptolemaic atlas, even if only mechanically, strived to identify barbarian names with well known ones from the Roman Empire. But it hardly ever occurred to his mind to take the trouble of examining whether barbarian names re-appearing on the different original maps signify identical or separate entities.

The phonetic identity of the forms may be noticed by Ptolemy, as in the case of "Marionis" and "Marionis No. 2" ("*Μαριωνίς ἐτέρα*") II, XI, 12, but this is a solitary exception.

As soon as the forms are not literally identical, he registers them as different names. The mass of such repetitions have already been observed by C. Müller, Chadwick, and Novotny. But it has not yet been pointed out how thorough-going the phenomenon is.

In some cases, the arbitrarily repated names seem to appear thrice or even four times. E. g.:

1. Rakatriai II, XI, 11, Rakatai *ibid.*, Ratakensioi II, VIII, 3.
2. Nauaroi with town Nauaron (Sarmatia Europæa) III, V, 12 & 13, Sauaroi (Sarm. Eur.) III, V, 10, town Nauaris (Sarm. Asiat.) V, IX, 16.
3. Virunoi (Ouirunoi) II, XI, 9, town Virunon (separated from Virunoi) II, XI, 12, Auarpoi II, XI, 9, Auarinoi III, V, 8.
4. Kognoi II, XI, 10, Batinoi *ibid.*, Kytnoi II, XIV, 2, Kotensioi (Kontekoi Athos Atlas) III, VIII, 3.
5. Buroi II, XI, 10, (Vis)burgioi II XI, 10, Kuriones II, XI, 11, Burgiones III, V, 8.

The phenomenon of the repetitions is of capital importance when we try to reconstruct Ptolemy's prototypes. We must calculate, therefore, how far the repetitions may be authentic or arbitrary.

In the actually existing nomenclature, repetitions of names are of course by no means excluded. Ptolemy himself relates several authentic repetitions, e. g. of Brukteroi, Kauchoi, Sueboi, Lugoi, Kampoi, Koistobokoi, Mediolanion.

The assumable reliability of Ptolemaic repetitions may moreover be advocated by the fact, that his predecessor Marinus had been extraordinarily diligent in collecting material. cf. Ptolemy's Book I, ch. VI, cited in our § 3.

In a series of cases such Ptolemaic details which stand isolated within the whole of antiquity, are confirmed by mediæval or modern evidences, e. g. Galindai = Galinditæ, Kalisia = Kalisz, Marnamanis = Marna, Korkontoi = Krkonosçe hory, Rakatai = Rakousy, Budoris = Buderich, Vidros = Wetter, Stereontion = Strinz, Amisia = Ems (town), Tarodunon = Zarten (mediæv. Zartuna).

Such observations must of course warn us against categorically distrusting any non-verified repetitions in Ptolemy's work. Yet they are, on the other hand, not sufficient to serve as a categorical guarantee.

We ought to remember Chadwick's sound critical warning against blindly trusting the classical tradition concerning peripheral regions¹). As we have seen above, the distortion of peripheral names is rather the rule than the exception, and this observation is not limited to Ptolemy but concerns also other classical geographers such as Strabo and Tacitus.

A "hapax legomenon" from the periphery of the classical horizon is of very low value, — we might be tempted to say: generally worth nothing. Concerning such cases, we may set forth the following general rule: an identification with another name — even if only possible through violent emendation — is preferable to the assumption of two separate "hapax legomena".

In order to obtain plausible results, we may strive to identify the "hapax legomena" with well known names from the regions concerned. For the exemplified names from the periphery represent as a rule exactly the most prominent ranks, and therefore it is the due right of the well known "upper ten" in these regions to claim any neighbouring "hapax legomena", if the resemblance is only halfway.

So much about the occurrence of repetitions generally. The next thing is to examine the Ptolemaic cases in particular.

We mentioned above, that Ptolemy has several undoubtedly verified repetitions. If we examine these more exactly, we observe that they are, as a rule, designated by differentiating marks; the Brukteroi and Kauchoi are divided into the "greater" and "smaller"; the Sueboi are divided into the Laggobardoi, Aggeiloi, Semnones; the Lugoi into Omanoi, Dunoi, Buroi; the Kampoi into Adrabai and Parmai; the Koistobokoi south of the Carpathian mountains are contrasted with the Koistobokoi *transmontanoi.

When the verified repetitions, consequently, are often distinguished by differentiating marks, most instances without such marks must beforehand be suspected. And as soon as two entire "milieus" of duplicates appear in fairly corresponding order, their separate existence in Ptolemy's geography is evidently due to a cartographer's fancy.

This impression will be supported if we examine the distribution of details statistically.

It is easy to show that geographic and phonetic unreliability prevails in certain parts of the atlas.

Any observer who regards the reproduction of the Athos Atlas, or the reconstructed maps in Müller's edition or in Erckert's "Wanderungen

¹) "The Origin of the English Nation".

und Siedlungen", will see at the first glance that the distribution of details — tribes and towns — is roughly speaking homogenous all over the area of Germany.

This scheme no doubt gives a beautiful impression of all-embracing knowledge. But the impression — alas! — is false. Ptolemy's scheme of distributing details must, as a matter of fact, be characterized as more or less artificial. The Roman ideas of Germany were far from being complete or accurate. Great parts of the country — especially north-east of the Elbe — were almost completely unknown. It is mainly at such places that Ptolemy fills out the lacunae by means of duplicates and misread Latin words.

But even the more well-known regions did not escape this sort of "making geography".

In south-western and middle Germany, for example, we find numerous tribes with most extraordinary names, never heard of anywhere else: Karitnoi, Intuergoi, Nertereanaï, Dandutoi, etc. We cannot regard this material as a piece of trustworthy local geography, drawn from the archives of Roman governors or municipalities. We must suppose that the monstrous forms are duplicates of well-known names, — only so cruelly distorted that we can scarcely recognize them.

Thus, taking it as a whole, the abundance of Ptolemaic details must be greatly reduced; in the majority of his Germanic and N. W. Sarmatian regions the existence of duplicates must be regarded as almost normal, so far as tribes are concerned, and there are also numbers of town duplicates. It must only be noticed that the alter-ego of a doubled name is sometimes not to be found within the map concerned of the atlas, but on a preceding or following one, sometimes in quite distant regions.

After eliminating the presumably arbitrary duplicates, there still remain a considerable number of town-names, peculiar to Ptolemy. But, as concerns names of tribes, the reduction of his "individual abundance" is in many regions practically annihilating.

It may be convenient to register what remains of Ptolemy's individual tribe-names from Germany, Scandia, and the Cimbric Peninsula, when the unreliable ones are subtracted. (In the following synopsis, those marked with a + re-appear in Latin or Greek literature after Ptolemy's time.)

- I. Germany south of the mountains. Adrabai Kampoi, Parmai Kampoi, Rakatai, Korkontoi, Turonoi+ = Teuriochaimai.
- II. North-western Germany. (None).
- III. North-eastern Germany. Siliggai+.
- IV. Scandia. Chaideinoi, Firaisoi+, Leuonoi, Goutai+, Daukiones+.
- V. Cimbric Chersonese. Saxones+, Sigulones, Sabaliggioi, Kobandoi, Chaloi.

At the same time, we may add some few supplementary "hapax legomena" from other classical authors.

Tacitus ("Germania"). Fosi (N. W. Germany), Lemovii (N. E. Germ.), Sitones (Scandia), Reudigni, Auiones, Uithones (Cimbr. Chersonese?). Notitia Dignitatum. Brisigavi (S. W. Germ.), Falchovarii (N. W. Germ.). Ammianus Marcellinus. Bucinobantes (S. W. Germ.).

Almost all of these tribes have left some trace of their existence, be it in mediæval tradition, be it in modern place-names. Only the following have not yet been identified: Adrabai, Parmai, Chaloi, Kobandoi, Leuonoi, Sitones. The Sigulones, Reudigni, Auiones re-appear in Widsith; the Chaideinoi are the later well-known Heinir in Hedemarken; the Falchovarii and Brisigavi are inhabitants of Veluwe¹), resp. Breisgau, etc.

Within Gothic territory, the island of Scandia and the Cimbric Chersonese contain the highest number of individual Ptolemaic tribe-names, viz. together some 10, against 6 or 7 known from other authorities. On the other hand, the same regions contribute the smallest share to the series of arbitrary duplicates, viz. 2 against 15 non-doubled names. The duplicates concerned are: Finnoi, with an alter-ego in Sarmatia, and Charudes = Farodinoi in Germany. As the alter-egos do not enter the Scandian or Cimbric ground, the two districts are completely free from confusion.

The lowest number of individual Ptolemaic tribe-names appears within North Germany (apart from the Nordalbingian region, which is regarded by Ptolemy as belonging to the Cimbric Chersonese). Along the German coast east and west of Holstein, Ptolemy does not add a single tribe-name to the number known from previous or contemporary authorities.

In Sarmatia Europæa, two thirds of the names along the northern coast are transplanted thither from southern regions.

If half of Ptolemy's Germanic details are proved to be duplicates or triplicates, it will of course be a severe disillusionment to those who believed in his "abundance". But, on the other hand, it is exactly these arbitrary repetitions which make it possible to reconstruct his lost prototypes. Thus, the gain will be greater than the loss.

§ 14. THE CASE OF FALSE IDENTIFICATION.

At the same time as the Ptol. constructor creates two or three names out of the single ones, he wrongly identifies numerous separate geographical details. Sometimes, the identification is due to the presence of

¹) O. Bremer, *Ethnographie*.

identically sounding names, but it is not always the case. The misplacements of prototypes are to a great extent due to this sort of misinterpretation, as we shall see later on. Whereas we shall comment upon the cases of false identification separately, when describing the single prototypes, we may here provisionally undertake a classification according to the geographical categories concerned.

Categories of exchanged details	Explanation of the mistake. (The letters in brackets signify the prototypes concerned)
district & district	district Germania in Belgium (<i>C</i>) mistaken for the Germania Megale i. e. Germany (<i>Aa</i>). § 24.
town & town	town Kondate near the inferior Loire, now Rennes (<i>C</i>) mist. for Kondate on the middle Loire (<i>A</i>). § 24.
town & town	towns Flenio & Matilone (<i>C</i> = Tab. Peutling.), mist. for Fleum & Marionis (<i>A</i>). § 24.
river & river	town F(oro) Adriani (<i>C</i> = Tab. Peutling.), mist. for Fabaria (<i>A</i>). § 24. river Amisias, an afflux of the Lahn (<i>Ab</i>), mist. for the Amisias, debouching into the North Sea (<i>Aa</i>). The modern name of both rivers is Ems. § 21.
tribe & tribe	tribe Tungroi in Belgium (<i>C</i> = <i>A</i>), mist. for the Tenk(t)eroi in Germany (<i>Aa</i>). § 24.
fortification & river	the north-western part of the Limes Transrhenanus (<i>Ab</i>), mistaken for the river Vidros = 1. Wied & 2. Wetter (<i>Ab</i>), which is again mistaken for the river Ijssel or Vechte (<i>Aa</i>). § 21.
fortification & mountain	the northern part of the Limes, and the Mümling line (<i>Ab</i>), mistaken for the mountain Abnoba (<i>A</i>). § 21.
fortification & mountain	the eastern part of Limes (<i>Ab</i>), mistaken for the mountain Sudeta (<i>A</i> or <i>B1</i>). § 21.
river & mountain	the middle & upper course of the Neckar (<i>Ab</i>), identified with the western outlines of the mountains Abnoba & Albia (<i>A</i>). § 21.
river & mountain	river Rhine (<i>C</i>), mistaken for the mountain Abnoba (<i>A</i>). § 24.

(identical or resembling names)

Categories of exchanged details	Explanation of the mistake. (The letters in brackets signify the prototypes concerned)
river & mountain	the inferior course of the Danube, with affluents (<i>Ae</i>), mistaken for the Transsylvanian mountains (<i>Ac</i>). § 22.
frontier & mountain	the north-western frontier of Rætia (<i>Ab</i>), mistaken for the south-eastern outline of the mountain Albia (<i>A</i>). § 21.
frontier & river	the western frontier of the Belgian Germania (<i>C</i>), mistaken for the river Rhine (<i>Aa</i>) = the western frontier of Germania megalē. § 24.
road & river	the route connecting the upper and inferior Vistula (<i>B1</i>), mistaken for the Vistula itself (<i>A</i>). § 23.
mountain & tribe	the mountain Sudeta (<i>B1</i>), changed into the tribe Sudenoi (<i>B2</i>). § 23.
mountain & town	the mountain Asbikurgion (<i>B1</i>), changed into the town Bikurgion (<i>B2</i>). § 23.
town & mountain	the town *Arlaunon (<i>C</i> , now Arlon) localised near the mountain Taunus (<i>A</i>). § 21.
coast & mountain	the coast of the Mæotian Sea (<i>E</i>), mistaken for the mountains of interior Sarmatia (<i>F</i>). § 26.
coast & river	the coast of the Venedikos kolpos, i. e. the Baltic (<i>E</i>), mistaken for the river Vistulas (<i>A</i> & <i>F</i>). § 26.

The reader will perhaps at the first sight ask incredulously, how we are able to guess at the different sorts of topographic misconceptions prevailing in the Ptol. constructor's method of working, — they may often seem quite impossible to trace. Here again we must answer that the entire milieu is the key to the correct interpretation. In order to discover the original position of misplaced Ptolemaic details, we must direct our attention towards those marked physical features which happen to be in the neighbourhood, — either coasts, mountains, or rivers. If a fairly correct localisation is effected, when we give the line concerned a new name, we may take it for granted that we have discovered the design of the original prototype. E. g., we may consider the tribes Ombrones, Auarinoi, Frugundiones, Sulones, Finnoi along the river Vistula in south-

western Sarmatia. These tribes are absolutely unknown in any historical or geographical records of the region concerned, and it is at first sight clear that the Finns can not possibly be placed south of the Wends on the frontier of Prussia and Poland! But as soon as we replace the Vistula by the coast of the Baltic, we obtain a quite correct list of localisations which is to be rewritten thus: Ambrones, Ouarinoi, Burgundiones, Gutones, Finnoi. Another illustrative case is the Ptolemaic localisation of Mediolanion, Teuderion, Nouaision, Vargiones east of the Rhine; this absurd piece of topography will be amended in a satisfactory manner, as soon as the mountain Abnoba is replaced by the Rhine.

§ 15. THEORETICAL ARRANGEMENTS.

In addition to the list of errors, we may make some observations concerning Ptolemaic features which belong to the category of theoretical arrangements. Some of them are arbitrary or directly wrong, whereas others may be better founded, but they at any rate point towards a collective editorial scheme, and some of them may be referred directly to Ptolemy himself.

A collective feature of the atlas is its tendency in favour of schematic divisions, and the preference given to the number 3.

Three classes of regions are distinguished: I indicating the pertinence of the towns to the various tribal districts; II with towns, but no ethnic classification; III without towns. The distribution of the classes is more or less arbitrary. All large islands, except Great Britain, are excluded from class I, even if they belong to the very best known radius, such as Corsica and Sardinia. The entire Germany is placed within class II, although no towns were really known by the Romans between the middle Elbe and the Oder. On the other hand, the Cimbric Chersonese is placed in class III, although it was decidedly better known than the last-mentioned German region. We suppose that the classification is due to Ptolemy himself.

Three classes of towns are distinguished: I with towers, and with a cross as astronomic mark¹⁾; II with battlements; III without towers or battlements; the astronomic mark in II and III is a point. Class I contains the towns which are used by Ptolemy as bases of observations concerning the length of the midsummerday. Such an astronomic point of view certainly betrays Ptolemy as author.

Three times three islets appear, symmetrically arranged round the Cimbric Chersonese: 3 western, 3 northern, 3 eastern. The two versions

¹⁾ Observed by J. Fischer, "Die handschriftliche Ueberlieferung", p. 227.

of the atlas differ in the arrangement, as I has $\equiv \equiv \equiv$, whereas II has $\equiv \equiv \equiv$ ¹⁾. This artistic arrangement can not possibly have occurred on the local map from which the design was originally drawn: for a map, designed directly on the basis of the Roman marine discoveries in the year 5 A. D. would certainly not have indulged in such fancy schemes of merely ornamental nature.

A conspicuous feature of the Ptolemaic atlas is the strong inclination of several northern coast-lines towards the north-east, appearing especially on the British islands and the Cimbric Chersonese. It may originate from the Ptol. constructor, but it may also have occurred on an original map, used by him, as it is traditional in Greek geographical literature.

A third arbitrary arrangement within the Ptolemaic atlas is the limitation of Germany. The country is represented roughly speaking in a square form. It includes the corner between the middle Rhine and upper Danube, — a district which had at Ptolemy's times been a Roman dominion for about a century — although one of Ptolemy's sources was a special map which represented the Roman frontier wall in the most conspicuous manner. On the other hand, the Cimbric Chersonese and the "island of Scandia" are placed apart, within a different statistical class, as we have mentioned above; besides, the name "Kimbrike Chersonesos" is written on the map with capital letters which rival those of "Germania megale". Cf. our § 28. These arbitrary arrangements are evidently due to a cartographer whose scheme was more ornamental and geometrical, than truly topographic.

Prototype *A*, and perhaps also others of the Ptolemaic sources, contained the Roman system of roads, or at least the main lines. But such details which would have added largely to the practical value of the atlas are completely ignored by the Ptol. constructor.

We have now finished considering the various classes of Ptolemy's errors and arbitrary arrangements. In the following paragraphs, we shall proceed to the reconstruction of his assumable prototypes.

§ 16. THE QUESTION OF PROTOTYPES.

The prototypes of Ptolemy's work betray their existence most obviously in those names which are doubled or tripled. But we may also recognize them in those names which appear only once. The fancy re-

¹⁾ Observed by J. Fischer, "An important Ptolemy MS.", p. 229, and "Die handschriftliche Ueberlieferung", p. 229.

petitions are generally like the backbones in whole bodies or complexes still preserving their cohesion inherited from the original prototypes.

Let us, e. g., take the tribes from the borders of the lower Elbe. Firstly, the "Lakkobardoi", i. e. Langobards, appear localised along the Elbe directly beside the Saxons. Secondly, their alter ego "Laggobardoi Sueboi" appear near the Rhine, directly beside the "Aggeiloi Sueboi", or Angles. — Only localisation no. 1 is correct, whereas no. 2 is due to fancy repetition and misplacement. But cohesion with the surroundings is disturbed in neither case: localisation no. 1 correctly shows the Langobards as neighbours of the Saxons, and no. 2 just as correctly places them beside the Angles. Moreover, the cohesion in case no. 2 appears at the first glance from the additional "Sueboi", common to both of the tribes concerned.

Similarly, we may in most cases point out whole series of non-repeated names accompanying the series of fancy repetitions. In order to have a fixed comprehensive denomination, we may unite both categories as "repetition milieus", or, when speaking more definitely, as "duplicate milieus" or "triplicate milieus".

Having stated the existence of such milieus, the next thing is to examine from what sort of prototypes they are derived.

Two main alternatives must be considered.

Our author — Marinus or Ptolemy — may have read various descriptions, such as Strabo's "Geography", Pliny's "Natural History", and the "Germania" of Tacitus, etc. From these he would have picked up the same names three or four times without recognizing their identity, and finally he would have tried to distribute the supposed new names within the framework of the Imperial Roman map of the world.

Or, we may suppose that our author did not start from descriptive works, but from ready-made maps. Thus, he did not localise every supposed new name separately, but reproduced the whole series, found on his original maps.

The first alternative seems to be preferred by Müllenhoff. Cf. especially the second volume of his "Deutsche Altertumskunde", wherein he deals with the making of Ptolemy's section *Sarmatia Europæa*. On the map of Germany, there are certainly some cases more or less distinctly belonging to this category. The most prominent is the famous "town" Siatutanda or "Protect-their-homesteads" which has been unveiled by Hermann Müller as an extract from the "Annals" of Tacitus. Another is the town Marobudon, originating equally from the Tacitean "Annals". Cf. our § 6.

But generally we are inclined to prefer the second alternative.

At any rate, it is clear that alternative no. 1 would make an analysis of the Ptolemaic atlas almost hopeless, whereas no. 2 would give a far

better chance. For the localisations found in the classical descriptions of barbarian Europe and N. Asia are very vague and would become completely confused when interpreted by a bad philologist such as the Ptol. constructor. Whereas a map says more distinctly what it means, no matter whether its contents are right or wrong.

We therefore think that, for argument's sake, we must start from the presumption that Ptolemy's atlas has been constructed mainly on the foundation of ready-made maps, and not mainly on the foundation of descriptions.

Our task will be an attempt to reconstruct the supposed original maps or "prototypes" used by Marinus-Ptolemy. The provisional research, in our opinion, has led to satisfactory results. If the critics will not admit it, they may counter-verify our results by undertaking a reconstruction of Ptolemy's sources on the base of alternative no. 1. We shall not enter upon this experiment ourselves, — for if alternative no. 1 were really preferable, we should not regard the ultimate results as worth the trouble.

Our paragraphs dealing with the single prototypes will contain the following sub-divisions:

a. Summary of Contents; b. Ptolemaic Localisation; c. Definition of Limits; d. General Topographic Scheme; e. Statistical Features; f. Occurrence of Duplicates; g. Linguistic Marks; h. Literary Milieu; i. Examination of Details; j. Conclusion.

§ 17. SYNOPSIS OF PROTOTYPES.

For the sake of a general survey, we start with a synopsis of the Ptolemaic prototypes assumed by us. In this way, their prominent features will more easily be realized and compared. Each of the summaries will be repeated unaltered at the beginning of the paragraph dealing with the prototype concerned. — Cf. our figure 1 which attempts to represent the assumable distribution of prototypes.

A. (§ 18). Collective map describing Europe partially or entirely.

The extension, as specified under 1—5 beneath, would correspond to the areas of the local prototypes *A*, *Aa*, *Ab*, *Ac*, *Ad* & *Ae*, *BI*. Presumably containing e. g.: 1) a physical description of Germany; 2) tribes along the German and Cimbric coasts; 3) fortification lines and towns in the Roman Limes district between the Rhine and the Danube; 4) tribes and towns along the mercantile road from the middle Danube to the mouth of the Vistula; 5) tribes and towns in Roman Dacia till beyond the Carpathian mountains; but scarcely recording towns in other regions

east of the Rhine and north of the Danube. Containing a system of roads. The Latin language is probably used in editing. Originally derived from the Imperial Roman map of the world; affinity with the *Tabula Peutingeriana*.

A. (§ 19). Local map, an oro- and hydrographic description of Germany.

Contains the most detailed representation of German mountains, known in classical times; the rivers are represented with less detail. Latin language of editing. Affinities with authors of the first century A. D., such as Strabo, Mela, Pliny, Tacitus. — Serves as main basis of the corresponding section in *A.* Cf. Fig. 5.

Aa. (§ 20). Special map; a coast description, stretching from about the Rhine to eastern Denmark.

Including Scania, but not the whole of the Scandinavian Peninsula. Detailed observations of headlands and islands; numerous tribes, but few or no towns. Duplicates of its names occur in *C*, *D*, *E* & *F*. Some Latin marks. Executed shortly after the expedition of the Roman navy to the Cimbric Chersonese 5 A. D. Affinities with Augustus (*Monum. Ancy.*), Mela, Pliny, less pronounced affinities with Strabo and Tacitus. — Correctly amalgamated with *A.* Cf. Fig. 1—4, 6—7, 29.

Ab. (§ 21). Special map, describing the Roman Limes Transrhenanus.

Containing fortification lines, mountains, rivers, and numerous towns, but no tribes. No duplicates. Latin marks. Executed after the construction of the *Vallum Hadriani*, i. e. towards the middle of the second century A. D. Affinity with the *Tabula Peutingeriana*. — The main part is correctly amalgamated with *A*, but the extremities are extended too far towards the north and the south-east. Cf. Fig. 8—11.

Ac. (§ 22). Physical map of Dacia.

Probably with few or no towns. Executed perhaps before the Roman conquest. Correctly amalgamated with *A.* Cf. Fig. 13.

Ad & *Ae.* (§ 22). Itineraries describing Dacia.

Containing rivers, tribes, roads, and towns. *Ad* and *Ae* are partially duplicates of each other; scattered duplicates besides occur in *B1*, *B2* & *F*. Latin marks. Executed after the Roman conquest of Dacia 105 A. D. Affinities with the *Tabula Peutingeriana* (= the *Anonymus Ravennas*). The prototypes seem to have been amalgamated before the times of Ptolemy; the map resulting is roughly speaking correctly amalgamated with *A.* Cf. Fig. 12—18.

B₁ & *B₂*. (§ 23). Itineraries, describing the mercantile road from the Danube to the mouth of the Vistula.

Containing mountains, rivers, tribes, a road-line, and towns. *B₁* and *B₂* are duplicates of each other; scattered duplicates occur in *Ac* & *E*. Latin marks; *B₂* may have been translated into Greek before the stage of Ptolemy. Executed after the introduction of a well established Roman amber trade under the reign of Nero (54—68 A. D.). Affinities with Strabo and Tacitus. *B₁* is correctly amalgamated with *A*; *B₂* is displaced, being introduced directly west of the twin prototype *B₁*. Cf. Fig. 19—20.

C. (§ 24). Itinerary, describing north-western Gaul, Belgium, and a part of north-western Germany.

Containing rivers, tribes and towns. Duplicates occur in *Aa* and *D*. Latin marks; perhaps translated into Greek before the stage of Ptolemy. Close affinity with the Itinerarium Antonini and the Tabula Peutingeriana. Displaced towards the east, the Belgian Germania of *C* being mistaken for Germany of *A*. Cf. Fig. 21—23.

D. (§ 25). Local map or description, containing Swabian tribes about the lower Elbe.

Only tribes traceable. A duplicate name occurs in *Aa*. No Latin marks. Affinity with Strabo and especially with Tacitus. Displaced towards the west, partially from the Elbe to the Rhine.

E & *F*. (§ 26). Collective maps, describing eastern Germany, Sarmatia Europæa, Sarmatia Asiatica, and Scythia.

Containing all sorts of geographical categories; *F* is besides marked by a system of "ethno-topic denomination". *E* and *F* are duplicates of each other; scattered duplicates occur in *Aa*, *Ac*, *B₁*, *B₂*. *E* has Latin marks (Sarmatai instead of Skythai *F*), but seems to have been translated into Greek before the stage of Ptolemy. *F* has only Greek marks. — Executed after the introduction of a well established Roman amber trade with the Baltic regions during the reign of Nero. Affinity with Pliny, including antiquated Herodotian names. — *E* is placed in eastern Europe and northern Asia, not entering Germany; it is turned over, so that north becomes west, whereas east becomes north. — *F* continues the eastern parts of *A* without confusion worth speaking of. It is possible or likely that *F* was amalgamated with *S_k*, before the combination of the latter with *A* took place. Cf. Fig. 24—26.

Sk. (§ 27). Special map or description of the Scandinavian Peninsula.

Containing tribes only. No duplicates, except Finnoi in *E*. Greek marks. A limited affinity with Tacitus. — Possibly amalgamated with *F*; finally introduced into the Scanian Peninsula of *A* (= *Aa*); it is so far correctly localised, but compressed within far too narrow an area. Cf. Fig. 27.

§ 18. COLLECTIVE PROTOTYPE *A* = EUROPE AND ENVIRONS.

a. Summary of Contents.

The extension, as specified under 1—5 beneath, would correspond to the areas of the local prototypes *A*, *Aa*, *Ab*, *Ac*, *Ad* & *Ae*, *Bl*. Presumably containing e. g.: 1) a physical description of Germany; 2) tribes along the German and Cimbric coasts; 3) fortification lines and towns in the Roman Limes district between the Rhine and the Danube; 4) tribes and towns along the mercantile road from the middle Danube to the mouth of the Vistula; 5) tribes and towns in Roman Dacia till beyond the Carpathian mountains; but scarcely recording towns in other regions east of the Rhine and north of the Danube. Containing a system of roads. The Latin language is probably used in editing. Originally derived from the Imperial Roman map of the world; affinity with the *Tabula Peutingeriana*.

It may at the outset be taken for granted that the work of Marinus was no mere mosaic of local maps or descriptions, freshly amalgamated by him, but that it started from more or less collective bases, and one of these would have been our assumable prototype *A*. We are not able to investigate it throughout Europe, as it would lead too far. For argument's sake, however, it is necessary to point out its possible traces within our particular sphere of concern, viz. middle Europe and surroundings.

We may here anticipate from the heading "literary milieu" that there actually existed a collective map with an extension fairly corresponding to that of our Prot. *A* beyond the Rhine and the Danube. It is the *Tabula Peutingeriana* which contains: A) northern German tribes as far east as towards the Elbe, e. g. Chrepstini = Cherusci; B) towns of the Roman Limes between the Rhine and the Danube; C) towns in Roman Dacia right north to the Carpathian mountains; D) the tribe of Buri, perhaps representing an originally more detailed description of the mercantile road from the Danube to the mouth of the Vistula. The presence of such a collective map is a fact which will remain unshaken, even if we do not succeed in proving the existence of a corresponding

document by means of internal observations from the Ptol. atlas. Consequently, we may regard the Tab. Peut. as the main basis for assuming a collective prototype *A*.

b. Ptolemaic Localisation.

Two sharply contrasting strata appear within the Ptolemaic atlas: the correctly and the badly localised prototypes.

The Ptol. maps of Germany and surroundings betray the existence of the following local prototypes which are in complete or partial harmony with the collective framework of the atlas:

A = physical map of Germany; *Aa* = Denmark and north-western Germany (partially corresponding to region *A* of the Tab. Peut.); *Ab* = south-western Germany (= region *B*, Tab. Peut.); *Ac*, *Ad* & *Ae* = Jazygia and Dacia (= region *C*, Tab. Peut.); *B1* = the mercantile road from the Danube to the mouth of the Vistula (= the somewhat questionable section *D* of the Tab. Peut.). — *A*, *Aa*, *Ac*, and *B1* are localised correctly. The main parts of *Ab* and *Ad* have been treated equally. But the northern extremity of *Ab* invades *Aa*, whereas the south-western seems to be turned the wrong way. *Ad* and *Ae* have suffered various displacements, although they are not entirely banished from their due localisations.

The following prototypes have all been totally misplaced by the Ptol. constructor:

B2, a duplicate of *B1*; *C* = Belgium & north-western Germany; *D* = the group of northern Swabians; *E* = a collective map of north-eastern Germany, *Sarmatia Europæa*, *Sarmatia Asiatica*.

The collective prototype *F*, a duplicate of *E*, is on the contrary correctly amalgamated with the Ptol. map of middle Europe.

The local prototype *Sk*, i. e. the map of the Scandinavian Peninsula, is connected with the design of Scania on the Ptol. map. The localisation is so far correct, but the scales of the two maps are obviously unequal and the Ptol. constructor has not been aware of this essential difference (cf. p. 40).

The distinction of what is correctly and incorrectly localised may sometimes be a matter of dispute, but the general fact can scarcely be contested that two such strata exist within the Ptol. maps of Germany and surroundings.

It seems to us that these two strata must betray the working of at least two different editors. The cartographer who interpreted a whole series of local maps fairly speaking correctly, apart from smaller mistakes, would not at the same time be found guilty of misplacing another series in the most absurd manner. Our argument is supported by the fact that the series of the correctly localised prototypes re-appear ge-

nerally on the *Tabula Peutingeriana*, partially with traces of the same moderate errors, whereas the *Tabula* contains no trace whatever of the larger Ptolemaic misplacements (those represented by the localisation of the prototypes *B*₂, *C*, *D*, and *E*). This observation will be discussed more particularly under the heading "literary milieu".

Consequently, we assign to Prot. *A*, as a rule, the more or less correctly localised prototypes. We except, however, Prot. *F* and *S**k*. The possibility is perhaps not excluded that Prot. *A* & *F* should be regarded as representing in one stratum a relatively correct map of the world. But *F*, at any rate, possessed an individuality of its own. It appears from different observations, viz.: the system of "ethno-topic denomination", cf. under d.; the occurrence of duplicates, cf. under e.; the pure Greek orthography, cf. under f. Prot. *S**k*, as we mentioned above, represents a scale largely differing from that of *A* and also the pure Greek orthography of *S**k* points towards a separate individuality. Most likely, *S**k* had been introduced into *F*, before the Ptol. constructor amalgamated this prototype with *A*.

c. Definition of Limits.

After stating generally the different qualities of the two Ptolemaic strata, our next task is to examine in detail how far the superior one stretches towards the north-east, — so far we may extend the assumable Prot. *A*, and no longer.

Along the coast, the extension is easy to define. The superior design embraces the German North Sea coast, the Cimbric Chersonese and the "island of Scandia". This area, corresponding to the local prototype *A**a*, stretches far east on the northern side of the Baltic. But, on the southern side, the superior design suddenly stops when the base of the Cimbric Chersonese is reached: the German and Sarmatian coast of the Baltic is a smooth theoretical line with no observation of local details except the fact that the coast curves towards the north-east when the mouth of the Vistula is passed.

The "island of Scandia", i. e. the peninsula of Scania, must have been completely blank, apart from its own name. The seven Scandian tribes on Ptolemy's map, including Norwegians and Fins, can not originally have been compressed within such a narrow space. Scandia is only the fifth part of the Cimbric Chersonese which affords room for practically the same number of tribes, (8). As a matter of fact, most of the MS. atlases give up the attempt at writing out the names of the Scandian tribes, because the space is insufficient.

The above-mentioned Baltic coast of Germany with the smooth theoretical outline is almost quite as bare of detail, containing, as it seems, only the following verified tribe-names which may be assigned to *A*:

Semnonnes, *Varinoi, Teutones. The rivers Chalusos and Svebos are duplicates of the Oder and Vistula, introduced from the displaced Prot. *B₂* by the Ptol. constructor. The frontier of this practically blank region is formed by the middle Elbe, the mountain Askiburgion, and the river Oder.

Then follows a better known region stretching from the Oder till beyond the Vistula. It is the area of the mercantile road from the Danube to the amber coast. The larger part of the Ptolemaic river "Vistula" is simply the line of this road in disguise as it appeared in Prot. *A* (= local Prot. *B₁*).

East of the Vistula, the assumable traces of *A* again disappear. Ptolemy decorates the coast with four rivers, Chronos, Rudon, Turuntes, and Chesinos. Three of them at least certainly belong to the misplaced Prot. *E*, being transplanted from the coast of the Black Sea where Pliny knows of the rivers Rhode and Acesinus.

In the inland region towards the south east, we may trace Prot. *A* throughout the map of Dacia which contains traces of relatively correct physical observations. We are not able to decide the eventual extension of *A* farther east (cf. under b., p. 40).

d. General Topographic Scheme.

When we claim for Prot. *A* the correct physical framework, the idea of accuracy is of course to be understood "cum grano salis". Numerous details of Europe which may belong to *A* are obviously wrong; e. g. the peninsulas of Istria and Chalkidike and the north-westward turning of the Rhine are ignored. But it must not be forgotten that in several cases Prot. *A* may have suffered deterioration at the hands of the Ptol. constructor, cf. § 15.

e. Statistical Features.

Prot. *A* seems to have contained categories which were eliminated by the Ptol. constructor.

The Roman fortification wall between the Rhine and the Danube was represented, NB supposed that the local prototype *Ab* belonged to the elements of *A*. Our presumption is supported by the fact that a part of the wall re-appears on the Tab. Peutingeriana, only mistaken for the upper course of the Danube.

A road system is also indicated. One of its routes is traceable from the Sarmatian (= small Carpathian) mountains to the inferior Vistula. It is the well-known amber road which has by the Ptol. constructor been disguised as frontier-line between Germania and Sarmatia; besides, a section of it is erroneously identified with the upper Vistula which flows in reality much farther east, apart from the very short initial branch. —

A whole series of roads are traceable in Dacia, belonging to the local prototypes *Ad* and *Ae*. The situation of the Ptolemaic towns corresponds so exactly to the routes of the Tab. Peut. that we observe clearly how the Ptol. constructor must have effaced the road-lines of the original map.

Ethnic signs, connecting the tribes with their respective towns, seem to have occurred within the area of Prot. *A*, because they have given rise to distortion of the Ptolemaic orthography in such cases as *pAtribatioi*, *roMorinoi*, *δUessones*, cf. § 10 og 11. We cannot, however, discern whether they belonged to the collective prototype *A* or only to some of its local elements. The present quite arbitrary distribution of the signs throughout all Continents is clearly due to the Ptol. constructor, cf. § 15.

A negative criterion is the absence or rareness of that peculiarity which we call the "ethno-topic denomination", and which has become a directly stereotypic mark of the collective Prot. *F*. Within the western area of Ptolemy's atlas, it is so rare that its presence may be regarded as merely accidental. We notice e. g. only two instances north of the Elbe, viz. *Kimbroi & Kimbrike Chersonesos*, and *Saxones & Saxon islands*. There are two instances between the Elbe and the Vistula: *Sveboi & river Svebos*, *Virunoi & town Virunon*. In Dacia, there would have been a natural opportunity of introducing some 4 or 5 cases of "ethno-topic denomination", cf. § 22, but it has not been used. As the ethno-topic denominations abound on the neighbouring Sarmatian ground, originating from Prot. *F*, we may regard their rare occurrence in more western regions as a sign that the sections concerned have a different origin.

Apart from the roads which are traceable on various points, it is scarcely possible to point out any marked statistical feature which might form a means of defining the area of the assumable prototype *A*.

In order to realise the absence of outstanding statistical features, marking the area of Prot. *A*, it will finally be advisable to regard the Ptolemaic inequalities, due to local prototypes within the area of Germany and its environs.

- a. = Prot. *Aa*. The Cimbric Chersonese and north-western Germany are filled with tribes which seem to be correctly localised. On the other hand, the Cimbric Chersonese is entirely bare of towns, and in north-western Germany, the correctly localised towns are at least rare. (The Ptol. constructor may have eliminated some towns from the Cimbric Chersonese, according to his arbitrary scheme, but there could scarcely have been many from the very beginning.)

- b. = Prot. *Ab*. The Limes line in the mountains of south-western Germany has numerous towns, but no verified tribes.
- c. The eastern side of the Rhine valley from Tarodunon to Mattiakon (Zarten-Wiesbaden) has neither verified tribes nor towns. It ought to have had ten times as many towns, as occur in *C* (cf. § 21, d.).
- d. = Prot. *B1* (= *B2*). Bohemia and eastern Germany are well furnished both with tribes and towns, and this is the case in both duplicate-series of a repetition-milieu.
- e. = Prot. *F*. A long part of the coast directly east of the Vistula is occupied by the lonely name of Venedai = Wends. No towns in this section of the prototype.
- f. = Prot. *E*. The extreme easterly part of the European north-coast, in return, is filled with an overwhelming mass of displaced tribes, tightly compressed. No towns in this section of the prototype.
- g. = Prot. *Sk*. The island of Scandia contains only tribes. These are correctly localised, as regards their mutual positions, but too tightly compressed.

It will strike the observer that each of the types mentioned is characterized by distinctly individual features. Whereas such inequalities would be effaced within the territory of the Roman Empire, they could not disappear in foreign peripheral regions which supplied a less abundant mass of cartographic material. The contrasts here persist, thus forming a means of pointing out the various local elements which have been successively combined with the framework of the collective prototype.

f. Occurrence of Duplicates.

We assume that the duplicate series *Ad* and *Ac* belong to the collective prototype *A*, because they re-appear on the Tab. Peut. Burgiones = Buroi *B1*; cf. BVR Tab. Peut.

Otherwise, the names from the area of *A* only re-appear in the displaced prototypes, and in *F*.

Gaul and Belgium. *Namnitai, Ratomagos, *Bagakon, Askiburgion, Morinoi, Vaggiones *A* = Namnetai, Ratomagos, Bogadion, Askalingion, roMorinoi, Vaggiones *C*; the first four names belong to the contents of the Tab. Peut.

N. Germany. Lakkobardoi *A* = Laggobardoi *D*.

Cimbric Chersonese. Charudes *A* = Farodinoi (*D*?).

E. Germany. The entire series of *A* = *B1* re-appears in *B2*.

Baltic coast. Teuton. . Ouirunoï *A* = Teutones Auarpoi *F*, Auarinoi *E*.

North-eastern Dacia. Karpianoï *A* = Harpioi with town Harpis *F*.

We do not count the two Marionis, as we regard that of Prot. *C* as a distortion of Matilone Tab. Peutung.

The line of duplicates in *A* and *F* stretching from the Baltic to the Black Sea roughly corresponds to the western frontier of the "ethno-topic denomination". It might be tempting to regard Ouirunon (read: *Ouarinon) as an ethno-topic annexe to Auarpoi (read: *Ouarinoi) *F*. But we have seen above that the *Ouarinoi of *A*, connected with *Ouarinon, were already within the Latin stage distorted into *Viruni, and then corrected back into *Vari. And the distortion started from the town *Ouarinon, which was "nostrified" after the well-known Roman town Virunum in Noricum. Thus it is scarcely possible to assign Ouirunon to Prot. *F*. It would at any rate require that the prototypes *A* and *F* had been amalgamated at a very early stage.

A third alternative must be taken into account, namely that the duplicates Teuton . . Ouirunoi = Teutones Auarpoi might belong to the twin prototypes *B1* & *B2*. — Our reason for assigning the said duplicates to *A* and *F* is found in the triple equation: Ouirunoi *A* = Auarpoi *F* = Anarinoi *E*. As Prot. *E* is an obvious duplicate of *F*, the presence of *Ouarinoi in the one seems to involve its presence in the other.

g. Linguistic Marks.

Ptolemy's bad orthography in numerous cases reflects his prototypes, betraying a contrast between Latin and Greek ones. The assumable collective prototype *A* — or the local prototypes harmonizing with its framework — obviously would belong to the Latin set.

We observe the following types of Latin residuals: non-translated Latin words such as Munition; non-transcribed Latin terminations such as *-us*, *-um*, *-i*; *-ô* or *-on* or *onê* (instead of the correct Greek from *-ôn*); misunderstood Latin correcture in Teutonoaroi-Virunoi; misreadings pointing towards Latin types such as *δUessonnes*; non transcribed Latin spellings *-ng*, *-nk*.

Somewhat less conclusive, but still noteworthy are the following two peculiarities:

Constant spelling *-ones* with "omikron" (not with "omega").

Constant spelling *-aou*, *-cou* (not *-au*, *-eu*).

In these two cases, no analogy could be found in a Latin prototype, because the Latin alphabet lacks a similar distinction. Still we believe that the said orthographic features are residuals pointing towards Latin prototypes.

It seems that the Greek transcription with "omikron" was the established rule for such Latin names which had no settled Greek orthography

of their own. It was quite natural, because the letter "o" was the same in both alphabets. But this conventional rule did not harmonize with the tendency of the spoken Greek language. At least in Ptolemy's atlas, the eastern maps obviously prefer *-ônes* (with "omega"), and we must suppose that the orthography in these parts of the world was mainly based on the principles of the Greek language and represents the vernacular phonetic tendencies of this idiom. Hence we draw the conclusion that a constant spelling with *-ônes* ("omikron") points to the presence of a Latin prototype, from which the letter "o" was mechanically inherited instead of introducing the more vernacular Greek orthography with "omega".

As to the spellings *-aou*, *-eou*, etc., it might at the first sight seem natural to regard these as indicating a Greek prototype, because no distinction between *-aou* and *-au*, *-eou* and *-eu* existed in the Latin alphabet. But although the Greeks possess the distinction, lacking in the Latin alphabet, they practically do not use it within their own "sphere of interest". Whereas the Romans, in spite of the want of distinguishing letters, seem to have actually observed the distinction in their spoken language. This again must have been noticed by the Greek cartographer who transcribed the Roman maps in his own language. The presence of the distinction, therefore, seems to be a trace of Latin prototypes.

So much about the Latin marks generally. We shall now regard their geographical distribution.

Britain: (H)orra, Tarvedum, Verubium, Virvedrum.

Spain and Portugal: Aistuarria, 2 Lukos, Libunka, Konkana, Segisamonkulon; Lakippô, Baisippô, Akinippô, Oiassô, Assô, Magô, Ursonê, Sisaponê, Alauôna. (The correct Greek form is introduced into the names of the important mercantile centres: Tarrakôn, Barkinôn, Oliosipôn = Tarragona, Barcelona, Lissabon.)

Gaul and Belgium: Agrippinênsis (Latin adjective); Tungroi, Obrinkas (Cod. Vatic. 191); Kesserô, Karkasô; Kossion; (the correct Greek form in the important name Narbôn); Piktones, Senones, (*δ*)uessones, Redones, Vaggiones, Loggonas (all with "omikron"; no exceptions).

Cimbric Chersonese: Misreading Fundusioi for *Eudusioi (Eudoses Tacitus); Saxones (beside Sigulônes)-

Germany: appellative "Munition" and the identical Bunion (and Uirition, again = Munition?); termination *-one*, *on(e)* in Munition etc., Singonê, Graunionarion (= Grinarione Tab. Peutinger), Fleum, Semanus, "town" Lugi-dunon = the tribe of Lugoï Dunoi.; correcture "vari" above Virunoi, mistaken by Ptolemy for Latin plural; Alkimoennis; Tenkeroi (Vat. 191), Angrivarioi, Singonê, Asanka (and LAKKOBARDOI < LANKO- < LANCO- < LANGO-).

Pannonia: Saldis (Latin dat. plur.), Akuminkon (two places), Akvinkon. Illyria: Kurkum, Oouporum, Stulpi, Ausankalei.

Italy: Angulos, Anxana (Vat. 191).

Sarmatia: *Transmontanoi, Karpianoï (Latin termination); Piengitai.

Dacia: Salinai, Pirum, Angustia (misreading for Augusta), Sangidaua.

Moesia: Karsum, Singidunon.

Egypt: Karkum.

We have not registered the cases of the spellings *-aou*, *-eou*, because they are too frequent; e. g. Trêoua in N. Germany, Dêouona in S. W. Germany, Seouakes and Karaouagkas in Noricum, Noouai in Moesia.

As contrast to the Latin residuals, the Greek ones must be considered. We shall name some instances.

Denomination Skythai (instead of the Latin correspondence Sarmatai).

Greek descriptive words: alsos (in Limios alsos).

Misreadings, pointing towards Greek types: *Auarinoi*, *Auarpoi* < *Ouarinoi*, *POYTIKAI* < *POYTIKAI* *OI*.

Constant spelling GG (not NG): *Laggobardoi*, *Aggeiloi*.

Constant spelling *-ônes* (with "omega", not with "omikron"): *Gythônes*.

Constant spelling *-AU*, *-EU* (not *-AOU*, *-EOU*): *Nauaroi*, *Sauaroi*, *Leuônoi*.

Regarding the distinction of prototypes, most of these marks are not so conclusive as the Latin ones. For the introduction of Greek lexical and orthographic emendations could be undertaken even at the very last stage before the issue. Nevertheless, we may suppose that pure domination of Greek marks and absence of any Latin residuals will in most cases point towards Greek prototypes.

From this presumption we may except the regions with predominating Greek nationality and besides some important mercantile centres with traditional Greek orthography. At such places, a Greek editor would naturally efface any traces of Latin prototypes. As a matter of fact, the toleration of Latin residuals within Greek domains is almost excluded (solitary exception: *Karkum* in Egypt, *Codex Urbinas 82*, noticed by J. Fischer).

The result of our observations is that the predominance of the Latinisms agrees with the above-mentioned characteristics of Prot. *A*. We stated above that the duplicates *Teuton-Ouirinoi Karpianoï* = *Teutones Auarpoi Harpioi* mark a line of contact between the prototypes *A* and *F*, at the same time forming the western frontier of the "ethno-topic denomination", peculiar to the latter prototype. Exactly the same contrast appears through the linguistic criteria: on the one side we have the Latin correcture **"vari"* above *Ouirinoi*, and the Latin termination in *Karpianoï*, — on the other we have the Greek misreading *Auarpoi* instead of *Ouarinoi*.

Various classes of evidences could scarcely support each other in a more satisfactory manner.

As we mentioned, it is of course not strictly necessary that all of the Latinisms observed must originate from the collective prototype *A*; several might have been introduced from local prototypes. We therefore shall repeat the cases concerned, when commenting on those local prototypes, which harmonize with the framework of *A*. But, taking it as a whole, it can scarcely be doubted that the Latinisms are a practical means of pointing out generally the sphere of Prot. *A*.

h. Literary Milieu.

In order to orientate the reader about the general milieu, we shall give two chronological lists. The one contains a series of described events, political or mercantile, which influenced the history of geography in northern Europe before Ptolemy's times. The other contains the most important geographical and historical publications before Ptolemy. We include some works from the period after Ptolemy's death, because they may reflect his sources.

List of political and mercantile events.

- 58 B. C. Cæsar fights the Swabians and other Germans on both sides of the Rhine, "Bell. Gall." I, IV, VI etc.
- 12 B. C. seq. Drusus and Tiberius begin the occupation of north-western Germany. Vellejus II, 97, Dio Cassius LIV, 31.
- c. 2 B. C. King Marbod of Bohemia establishes the great Swabian Empire. Strabo VII, 290, Tacitus, "Ann." II, 45.
- B. C. Domitius Ahenobarbus settles a flock of Hermundures within a territory left vacant by Marbod's Marcomans. Dio LV, 10. Firm mercantile relations between the Romans and Hermundures are established, lasting for more than a century. Tacitus, "Germania" ch. 41.
- 5 A. D. Tiberius camps on the border of the lower Elbe. The Roman navy visits the Cimbric Chersonese. Augustus "Monum. Ancyr.", Strabo VII, 293, Vellejus II, 106, Pliny II, 167.
- 9 A. D. The Roman dominion over interior Germany is destroyed. Vellejus II, 117, Dio LVI, 18.
- 17 A. D. King Marbod's great Swabian Empire breaks down. Tacitus, "Ann." II, 44-46.

- 21 A. D. seq. The Romans repeatedly interfere with the conflicts of German tribes in Bohemia and Moravia. Tacitus, "Ann." II, 63; XII, 29; "Germ." ch. 42.
- 47 A. D. After repeated campaigns in north-western Germany, the Romans definitely give up the coast between the Elbe and the Zuider Sea. Tacitus, "Ann." XI, 20.
- Betw. 54 & 68 A. D. A firm mercantile connection with the Prussian Amber Coast is established. Pliny XXXVII, 45.
- 69—70 A. D. Rebellion of the Batavian chief Civilis against Rome. Tacitus, "Historiae" IV, 12 seq.
- c. 85 A. D. Masyos, king of the Semnones about the lower Elbe, makes a voyage to Rome. Dio LXVII, 5.
- c. 90 A. D. Establishment of the Roman Limes district between the middle Rhine and upper Danube. Tacitus, "Germ." ch. 36.
- Shortly bef. 98 A. D. The Boructres in north-western Germany are defeated and "almost exterminated" by their neighbours. Tacitus, "Germ." 36.
- 105 A. D. Trajanus conquers the Dacian regions south and east of the Carpathian mountains.
- Betw. 117 & 138 A. D. Hadrianus completes the fortification wall of the Roman Limes district between the Rhine and the Danube.
- 166—180 A. D. The Romans are engaged in war with the nations beyond the middle Danube, such as the Marcomans in Bohemia and the Dacians in Poland. Dio LXXI seq., Jul. Capitolinus XXII seq.

List of publications.

- 27—20 B. C. Agrippa, "Commentarii"¹⁾.
- 7 B. C. Map of the world, made by order of Augustus (Chorographia Augusti; lost).
- before 14 A. D. Augustus, Monumentum Ancyranum.

¹⁾ Cf. Müllenhoff, "Deutsche Altertumskunde", III, p. 212 seq.

- c. 18 A. D. Strabo, *Geographia*.
- 29 A. D. Vellejus Paterculus, *Historia Romana*.
- c. 40 or 50 A. D. Pomponius Mela, *Chorographia*.
- 77 A. D. Plinius, *Naturalis Historia*.
- 97 A. D. Tacitus, *Historiae*.
- 98 A. D. — , *Germania*.
- c. 115 A. D. — , *Annales*.
- c. 211—229 A. D. Dio Cassius.
- c. 286—305 A. D. Julius Capitolinus, *Bellum Marcomannicum*.
- 4th century A. D. *Itinerarium Antonini*.
- 4th — A. D. *Tabula Peutingeriana*.

At first sight, it may seem a difficult if not hopeless task to attempt to make positive statements concerning the literary milieu of Prot. *A*. For as long as the contents and limits of the prototype are not even approximately pointed out, we have no firm base for making literary comparisons.

This is true. Nevertheless, we may for argument's sake set forth some provisional remarks.

It is natural to suppose that the original foundation of Prot. *A* was the lost *Chorographia Augusti*, the Imperial Roman map of the world, finished in the year 7 B. C. and later no doubt subjected to several revisions.

The Roman horizon towards the north was greatly enlarged through the naval explorations along the German and Danish coasts in the year 5 A. D., and through the contemporary and subsequent undertakings in interior Germany, military as well as mercantile. The last important incidents of this epoch are: the intermeddling of Rome with the affairs of Bohemians and Quades, about 21—50 A. D., and the establishment of a firm mercantile connection with the Prussian amber coast, about 60 A. D. The new discoveries were described in the local prototypes *A*, *Aa*, and *B1*, resp. a physical map of Germany, a map of the German and the Danish coasts, and a map of the road to the amber coast, cf. §§ 19, 20, 23. They were indubitably introduced into the framework of the Imperial map of the world, in consequence of its repeated revisions. Corre-

sponding literary milieus are represented by the geographers, Strabo, Mela, Pliny, and Tacitus.

During the reign of Domitianus, (81—96), the corner of Germany between the middle Rhine and upper Danube was transformed into a Roman "Limes district", and its frontier walls were completed under the Emperors Trajanus and Hadrianus the latter of whom reigned since 115 A. D. In the year 105, Trajanus conquered the part of Dacia lying between the river Theiss and the Black Sea. Through these conquests, the Roman Empire obtained its largest extension along the northern side of the Danube. The cartographic results were the local prototypes $Ab =$ the Limes district, and $Ac, Ad \& Ae =$ Dacia.

These maps were also introduced into the framework of the collective map. Their main contents were placed correctly, even if several details were misinterpreted.

With the additions mentioned, Prot. A seems to have reached its accomplishment. We have assumed above that the relative correct Ptol. localisation of the prototypes $Ab, Ac, Ad \& Ae$, etc. was due to another cartographer than the one who introduced Prot. B_2, C, D , and E in the most confused manner. Besides, the linguistic marks of the more or less correctly localised prototypes point towards Latin authorship, whereas at least two of the displaced prototypes contain Greek marks.

Whereas the additions to the Augustean horizon are in previous literature only reflected by descriptive works, now at last the literary milieu supplies a correspondence in cartographic form, viz. the Tabula Peutingeriana. It is a most prominent feature of this document that it contains the Roman Limes district and Roman Dacia, thus representing the stand of the Empire after the large conquests in the beginning of the second century A. D. The existing edition of the Tabula, it is true, introduces elements from a somewhat later epoch, — freshly formed German tribal names such as Franks and Allemans, and numerous place-names betraying the spreading of Roman nationality throughout Dacia; at the same time, the entire Cimbric Chersonese and the greater number of details from the lost Roman province in northern Germany have been left out, — evidently because these regions had long since passed out of Rome's practical sphere of interest. Nevertheless, the correspondence with our assumed Ptolemaic Prot. A is unmistakable. We also notice that the frontier wall of the Limes is traceable on the Tabula, as in $A (= Ab)$, and that the exact correspondence of the Dacian towns in both documents betrays that Prot. A contained the same road-system as the Tabula.

Supposing that the author of the Tabula extracted Prot. A or a closely related map, we should draw attention to a negative fact which may perhaps be of some importance to our conclusions. The Tabula

contains no single trace of displacements corresponding to the Ptol. localisation of the prototypes *B*₂, *C*, *D*, and *E*. There is a most intimate correspondence, it is true, between the Tabula and the displaced Ptol. prototype *C*, but the names concerned on the Tabula all correctly hold their place in Belgium, exactly as the corresponding section does in the assumed Prot. *A*; cf. e. g. the names Namnetes, Ratomagus, Bagacum, and Asciburgium, appearing with relatively correct localisation in Prot. *A* and on the Tabula, and with displacement in the Ptol. section derived from Prot. *C*.

It must of course be admitted that the Tabula leaves out the larger part of that area within which the Ptol. displacements occur. Consequently, the negative evidence is not so valuable as it would have been if the area concerned had been copiously represented. Nevertheless, there are sufficient regions where displacements of the Ptolemaic sort might have been expected: the *Redones from Rennes might have been banished to the middle Loire, the *Namnetes from Nantes to the Seine; *Langobardi might have occurred at the middle Rhine, *Usipii near the Schwarzwald, *Chattuarii at the source of the Danube, etc. In our opinion, it is not very likely that these and similar displacements should have occurred in the source of the Tabula, and all have happened to be eradicated by the author of this map, — quite accidentally. It is a far more reasonable alternative to suppose that hardly any such displacements occurred in the source, extracted by him. There is one exception, it is true, but it only confirms the main rule. We have stated above that the localisation of Prot. *Ab*, *Ad* & *Ae* within our assumable Prot. *A* betrays some errors, e. g. *Ad* and *Ae* have been incorrectly combined. It is all the more worth noticing that the section Dacia of the Tabula contains exactly the same incorrect combination of the two prototypes mentioned.

To sum up, we hold that the internal examination of Ptolemy's maps, supplemented by the comparison with the Tabula Peutingeriana, seems to point towards the existence of a collective prototype *A* as defined above.

The next question is: who was the author?

One chronological fact is evident: he must have been at work still after 115 A. D., in order to introduce the Vallum Hadriani and the established system of Roman roads in Dacia.

The observation would be conclusive as to the authorship, if we assumed with A. Herrmann¹⁾ that the years about 100 A. D. were the epoch when Marinus was composing his atlas. Then the author of Prot. *A* would simply have been Marinus himself. In this case, the displaced

¹⁾ "Zeitschrift des Vereins für Erdkunde zu Berlin", 1915.

prototypes *B₂*, *C*, *D*, and *E*, would most likely have been introduced by his editorial heir, Ptolemy.

However, we see no strict necessity for placing the working of Marinus as early as 100—120 A. D. This date cannot be deduced from the Ptolemaic preface which makes no mention of his lifetime. As Ptolemy most probably lived to witness the beginning of the Marcomannian war, 166 A. D., nothing prevents us from placing the work of his predecessor about 140.

Then the author of Prot. *A* would have been an anonymous cartographer. He would most likely have been of Roman nationality, as the area of Prot. *A* is so constantly characterized by Latin marks. His anonymity cannot surprise us, as we ignore equally the author of the *Chorographia Augusti* from the year 7 B. C. Perhaps, the author of Prot. *A* was only a revisor who introduced the latest acquired local maps into the otherwise ready-made collective map.

The subsequent development would be clear: Marinus would have introduced the entire series of displaced maps, such as *B₂*, *C*, *D*, and *E* (perhaps also the correctly localised collective map *F*). Ptolemy would have added nothing, except those few Asiatic and African maps which he enumerates in his preface, ch. XVIII.

Our assumption seems to agree with the literary portraits of Marinus and Ptolemy, such as we may draw them on the base of the latter's work. Marinus, according to Ptolemy, was a gatherer of material, whose energy in collecting was enormous, but whose power of criticism was characterized as insufficient. Such qualities would correspond exactly to the uncritical introduction of original maps, with absurd localisation, evidently undertaken in order to fill out bare spots. Ptolemy, on the other hand, according to his own words, has only contributed little to the collection of fresh material. He puts the main stress on the astronomical fixation of the localities, and on the elimination of antiquated details. He has, it is true, tolerated numerous inherited wrong representations, and he has not always been sufficiently strict in carrying out his own critical principles. But it is easily understood that Ptolemy dared not correct his renowned predecessor's maps of peripheral northern regions which lay far beyond his own horizon. And the partial lack of systematic strictness is no sufficient reason for assuming that a critical author like Ptolemy would indulge in uncritical heaping of material, directly against his own principles.

i. Examination of Details.

See the corresponding sections in the §§ dealing with the local prototypes *A*, *Aa*, *Ab*, *Ac*, *Ad*, and *BI*, of which *A* is composed.

j. Conclusion.

Owing to the provisional impossibility of examining the entire Ptolemaic atlas, our preceding researches consist too much of guess-work. Such "pioneering hypotheses" are, however, necessary. And the reader need not fear that the guessing will prevail equally in the following paragraphs, dealing with the local prototypes: here, the sphere of research will be easier overlooked and penetrated.

§ 19. LOCAL PROTOTYPE *A* = GERMANY.

a. Summary of Contents.

Prot. *A* is an oro- and hydrographic map of Germany. It contains the most detailed description of German mountains, known in classical times; the rivers are represented with less detail. Latin language of editing. Affinities with authors of the first century A. D., such as Strabo, Mela, Pliny, Tacitus. Cf. Figures 2, 3, 5 and L. Schmidt (Seeliger's "Hist. Vierteljahrschrift" 1902) who has already assumed a corresponding prototype. Cf. also the additions in Appendix A (after § 29).

b. Ptolemaic Localisation.

The framework of *A* forms the basis of Ptolemy's map of Germany. It is correctly localised, as it must be, for the frontier rivers, Rhine and Danube, allowed of no mistake.

c. Definition of Limits.

The introduction of other prototypes into the area of *A* has already been described in the paragraph dealing with the collective prototype *A*, § 18, and need not be repeated here.

We only emphasize that the rivers Chalusos and Svebos and the river-name Viadua belong to the details introduced by the Ptol. constructor, and that the mountain Abnoba *A* has been displaced towards the north-east, owing to the amalgamation with Prot. *Ab*: the Ptol. Abnoba in reality corresponds to the Vallum Trajani of Prot. *Ab*, whereas its northern extremity may conceal the mountain *Taunus of Prot. *A*, still reflected by the Ptol. position of the town Ar-taunon, cf. under e.

d. General Topographic Scheme.

The Ptol. design of German mountains and rivers is highly remarkable because of its excellence which may be called almost unrivalled throughout the entire atlas. It is e. g. decidedly better than the corresponding description of Gaul, although the latter country had been a Roman province for more than two centuries when Ptolemy was making

his atlas. Such a physical map of Germany seems to point towards the existence of an individual prototype. Its elements, when taken separately, might certainly be attributed to the above-mentioned local prototypes, such as *Aa*, *Ab*, *BI*. But the fusion into an excellent physical map of Germany seems to point to the authorship of one person, — a topographer with very special experience.

e. Statistical Features.

Ptolemy records the names of no less than 10 mountains or woods in Germany. The town Ar-taunon may point towards the original presence of a number 11, the Taunus, even if the town itself is in reality the Belgian Orolaunum, now Arlon or Aarlen, transplanted by the Ptol. constructor from Prot. *C*.

There are not so many rivers, as several Ptolemaic ones must be eliminated: Vidros belongs to Prot. *Ab*, Chalusos and Svebos to *B2*, and Viaduas is a duplicate of Vistula. But, on the other hand, the Ptol. constructor may have eliminated names of rivers occurring in Prot. *A*. We conclude this from the fact that his map of Germany contains no less than three anonymous affluents of the Danube.

We have not been able to discover any tribes or towns which must necessarily have filled out the framework of *A*. Its contents may have been merely physical.

f. Occurrence of Duplicates.

Two of the mountains, belonging to the complexe of *A*, re-appear in the duplicate series of *BI* & *B2*, viz. Asbikurgion (alias Askiburgion) = Bikurgion, and Sudeta = "tribe" Sudenoi. They must, then, have occurred in the special maps describing the mercantile road from the Danube to the inferior Vistula. But this assumption does not imply that they were omitted in *A*; they seem to form absolutely indispensable links in the mountain system of the latter prototype. Melibokos *A* has by R. Much been identified with the town Melokabos, belonging to Prot. *Ab*, and we have had the same idea independently; but the duplicate would in this case most likely have existed in actual nomenclature, as Melokabos belongs to a well verified list of Roman frontier fortresses (Prot. *Ab*), and corresponds to the present Miltenberg.

g. Linguistic Marks.

Latinism: Semanus, to be supplemented: saltus ("wood").

h. Literary Milieu.

The elaboration of Prot. *A* is due to the military and mercantile undertakings of the Romans during the first century A. D. The eastern

area, extending from the Danube to the inferior Vistula will be investigated in the paragraph dealing with Prot. *B1* & *B2*.

The main features of Prot. \bar{A} re-appears in the works of all geographers from the first half of the century. Cf. the following synopsis.

	Ptolemaic map	Strabo (supplemented by Agrippa)	Mela	Pliny
Peninsula	Cimbric Chersonese	Cimbric Chers.	Cimbri <i>in</i> the Coddan Gulf, i. e. on a peninsula	Cimbric headland
Islands	a row of islands along N. W. Germany	islands along N.W. Germany	islands in the region of the tide (= North Sea)	23 islands along N.W. Germany
	"town Fleum"		Flevo	
	"town" Fabira(non)	Byrchanis		Fabaria = Bucana
Mountains	Orkynios Gabreta Abnoba	Herkynios Gabreta	Hercynius	Hercynius Abnova (do. Tacitus)
	"town" Ar-taunon		Taunus (do. Tacitus)	
	"town" *Teutiburgion		(Teutoburgiensis saltus, Tacitus)	
	Semanus			
	Melibokos			
	Albia			
	Askiburgion (do. <i>B1</i> & <i>B2</i>)			
	Sudeta (do. <i>B1</i> & <i>B2</i>)			
	Luna			
	Sarmatika ore			
Rivers	Albis Amisias, Amasias Visurgis Vistulas	Albis Amasias Visurgis (Agrippa: Vistula)	Albis Amisis Visurgis Vistula	Albis Amisis Visurgis Vistla, Visculus

It appears from the comparison that the Ptol. map puts the main stress on the orography and in this respect it remains unrivalled. Other classical authorities only add little to the Ptolemaic selection, viz. Cæsar: Bacenis; Tacitus: Silva Caesia; Dio: Vandalika ore; Tab. Peut.: Silva Marciana.

The Ptol. hydrography of Germany is distinct and good, but it is not so unique as the orography of the same section. The Ptol. main rivers are known collectively by Mela and Pliny, and, with one exception, also by Strabo. And each of these authors, as well as Tacitus, adds rivers which do not appear on the Ptol. map, viz. Strabo: Lupias, Salas; Mela: Lupia, Flevo, Moenis (and swamps Suesia, Metia, Melsyagus); Pliny: Flevus, Marus, Duria; Tacitus: Lupia, Nabalia, Adrana, Cusus; cf. also Marc Aurelius: Granua; Ausonius: Nicer. We have, however, mentioned that the Ptol. constructor seems to have left out river-names occurring in Prot. *A*, and it is also not excluded that the Ptol. towns Fleum and Nabalia were originally accompanied by the homonymous rivers, known from Tacitus.

If we consider the additional material of Strabo, Mela, Pliny, and Tacitus, we shall notice that apart from two exceptions, the names concerned are all quite individual to each of these authors.

Consequently, a general correspondence between Strabo, Mela, Pliny, and Tacitus, only takes place at such points where it is shared by the Ptol. map of Germany.

We regard this fact as a further indication that Prot. *A* was a document which fundamentally influenced the classical ideas about Germanic geography. It furnished the main framework not only of the Ptolemaic map, but also of the descriptive representations of the same regions.

i. Examination of Details.

Semanus is Fichtelgebirge, the centre of the middle German mountains. In German, the name may have sounded simply Sema; the ending *-nus* would be a Latin addition. The ancient name seems to be preserved in Čechian as Smrčiny.

Sudeta = Böhmerwald. The present localisation, north-east of Bohemia is absurd, — a fatal consequence of the superstition that only Ptolemy's text and not his atlas must be regarded as conclusive.

Gabreta = Baierischer Wald, or perhaps some southern extremities of the Böhmerwald.

Luna, and the Sarmatian mountains, might be respectively the Moravian hills and the small Carpathian mountains. But they may perhaps also be interpreted thus: sm. Carpathian mountains and Tatra.

Askiburgion, the "Ash-mountain", is generally identified with the Jeseník which means the same in Slavonian. The mountain Jeschken or Ještěd in northern Bohemia may perhaps also reflect the ancient name.

Melibokos is = the Thüringerwald, according to Ptolemy's map. If the same name occurs in Melokabos *Ab* (read: *Melobakos), now Miltenberg, its area would have extended to the western course of the Main, including the mountain Speshard. The element *-bokos* is = "beech",

occurring in several German names of mountains, such as Deutschbuch, Albuch etc.

Tauno-, in Ptolemy's Ar-taunon, = Feldberg in Hessen. The present use of the name Taunus is of course a learned invention.

Abnoba = the Schwarzwald; the Ptol. displacement of the name has been mentioned above under b. Cf. Chr. Mehlis, "Die klassischen Namen des Schwarzwaldes", in "Petermanns Mitteilungen", 1914, p. 74, where the extension of the Abnoba is shown by means of Roman inscriptions.

Albia = die rauhe Alb, or Schwäbische Alb.

j. Conclusion.

The individual existence of Prot. \dot{A} is in the first line derived from the impression which the observer receives from the physical design. The general correspondence with the geographers of the first century A. D. affords a support, even if it must be admitted that the evidence is somewhat meagre, as it is in most cases limited to the category of very important names. The Ptolemaic amalgamation of Prot. \dot{A} with other original maps greatly contributes to effacing its prominent qualities, and as long as observers contented themselves with the modern Ptolemaic maps reconstructed from the text, there would be still less chance of a favourable valuation. When modern scholars have hitherto unanimously placed the Ptolemaic Sudeta north of Bohemia, not south of this country, their mistake betrays that they regarded the Ptolemaic design as hopelessly confused. The study of the hitherto despised MS. atlas will here, as in other points, contribute to a juster valuation of our assumed Prot. \dot{A} .

§ 20. LOCAL PROTOTYPE Aa = NORTH-WESTERN GERMANY, AND DENMARK.

a. Summary of Contents.

Prot. Aa is a special map; a coast description, stretching from about the Rhine to eastern Denmark; including Scania, but not the whole of the Scandinavian Peninsula. It contains detailed observations of headlands and islands; numerous tribes, but few or no towns. Duplicates of its names occur in *C*, *D*, *E*, and *F*. Some Latin marks. The prototype would have been executed shortly after the expedition of the Roman navy to the Cimbric Chersonese 5 A. D. Affinities with Augustus (Monum. Ancy.), Mela, Pliny, less pronounced affinities with Strabo and Tacitus. Cf. Figures 1—4, 6—7, 29.

b. Ptolemaic Localisation.

In its present appearance, Prot. *Aa* has been used in order to supplement the older collective map which originated from the times before the Roman discoveries along the North Sea and the Baltic. This cartographic process of amalgamation was in most cases carried out successfully. Most likely, it was accomplished before the stage of the Ptol. constructor.

c. Definition of Limits.

The displaced Prot. *C*, on the Ptolemaic map, invades the German part of *Aa*, covering it all over with towns. The Cimbric Chersonese, however, remains completely untouched.

The western German part of *Aa* is invaded by Prot. *Ab*, as the Ptol. constructor exaggerates the Limes Transrhenanus and the southern river Amisias so far that they reach the North Sea.

On its southern periphery, Prot. *Aa* touches the displaced prototypes *Bz* and *D*, which generally do not invade its area. Prot. *D* offers the most marked contrast. As soon as the German tribes of Prot. *Aa* stop, those of *D* continue. A sharp line of demarcation is formed by the three Swabian tribes of *D*, stretching from the Rhine to the Oder. Only one single tribe of *Aa* transgresses the line, viz. the *Tenkteroi. The sudden appearing of the *D*-set shows that the prototype *Aa* did not go farther south than to middle Germany. Then the space was left blank, capable of receiving the interpolated Ptolemaic mass of names.

The extension of Prot. *Aa* towards the south-east is easy to observe: evidently, the southern coast of the Baltic remained unexplored and was therefore expressed by a smooth theoretical line betraying no topographic experience. The contrast to the relatively detailed design of Scania is striking.

South of the Baltic, the eastern outposts of *Aa* touch the north-western outposts of *F*: Teuton . . Ouirunoi *Aa* = Teutones Auarpoi *F*.

Prot. *Sk*, i. e. the Scandinavian Peninsula, is amalgamated with the blank map of Scania in *Aa*, perhaps through the intermedium of *F*, cf. §§ 26—28.

d. General Topographic Scheme.

The physical design of Prot. *Aa* is first class. Its coast description of north-western Germany is excellent. That of Denmark is simply astonishing, — for we must take into account that the country remained unexplored till the year 5 A. D., and that the Romans had no opportunity of continuing their explorations after that date. It is scarcely conceivable how the Roman officers could discover so much during some few months' stay near the Danish coasts.

It must be added that the description of the Danish and Saxon archipelagoes no doubt suffered deterioration at the hands of the Ptol. constructor who introduced an arbitrary artistic arrangement, viz. the 3 times 3 islets surrounding the Cimbric Chersonese.

e. Statistical Features.

Prot. *Aa*, as we mentioned above, contains mainly tribes, whereas Prot. *B2* and *C* contain a copious selection of both tribes and towns. *Ab*, on the other hand, contains towns and no tribes. It must, however, not be forgotten that the Ptol. constructor may have increased the contrast, by leaving out all details from the Cimbric Chersonese except the names of tribes (and of surrounding islets). Cf. § 15.

Within Prot. *Aa*, we notice some instances of "ethno-topic denomination", viz. Kimbroi & Kimbrikê Chersonêsos, Saxones & Saxon islets, Virunoi & town Virunon. The occurrence of this feature, however, can scarcely be said to constitute a predominant system, such as in Prot. *F*.

f. Occurrence of Duplicates.

Chaimai, Kaukoi mikroi, Askiburgion = Kamauoi, Kalukones, Askaligion *C* (perhaps also Tulisurgion = Tulifurdon represent a duplicate of *Aa* and *C*).

Lakkobardoï, Charudes *Aa* = Laggobardoï, Farodinoï *D*.

Teuton-, Ouirunoi (Virunoi) *Aa* = Teutones, Auarpoi *F*, Auarinoï *E*.

Marionis *Aa* = Marionis *C* is a pseudo-duplicate, as the name belonging to *C* seems to be a mutilation of Matilone on the Tabula Peutingeriana. Cf. § 24, f.

g. Linguistic Marks.

Latinisms or misreadings pointing towards Latin script.

Cimbric Chersonese. *Fundusioi* misread for **Endusii*. Saxones (with "omikron"; versus Sigulônes).

Germany. Bunion = Munition in *Ab*. Fleum; Tenkeroi, Angrivarioi; LAKKOBARDOI misread for *LANKO. < *LANCO.; misunderstood correction *"vari" above *Viruni; Teuton- (with "omikron"); Trêoua. No typically Greek marks.

h. Literary Milieu.

Prot. *Aa* represents the topographical information collected during the time of Roman rule over N. W. Germany. The prototype is of somewhat later origin than the Imperial map of the world, for the former was executed by the year 7 B. C., whereas the Roman dominion over N. W. Germany did not reach its zenith before 5 A. D. After the

downfall of Roman power in the year 9 A. D., and after the Romans had in 47 A. D. definitely given up their last positions along the coast of N. W. Germany, the topography of these regions soon ceased to be generally known, — a fact stated directly by Tacitus, "Germania" ch. 41: "Albis . . . flumen inclitum et notum olim; nunc tantum auditur". On the following pages, we shall show through a series of details that Prot. *Aa* agrees with the authorities from the first century A. D., whereas it has marked differences from the stage of Tacitus. As to Strabo, we should be led to expect that he would present distinct points of resemblance with Prot. *Aa*, because he wrote at the beginning of the century. But, singularly enough, he rather agrees with the geographers of the Tacitean stage. To a great extent, his lack of knowledge is obviously due to the fact that he would not believe in the Roman discoveries north-east of the Elbe, as he states emphatically VII, p. 294.

The chief milieu of Prot. *Aa* is represented by the authors Augustus, Mela, and Pliny, as we shall now indicate through a series of observations.

1. More or less distinct knowledge of numerous islands in the North Sea and between the Cimbric Chersonese and Scania is common to *Aa*, Mela, Pliny (III, 6, resp. IV, 96). Strabo at least knew of islands along the coast of north-western Germany, whereas he ignored those of the Baltic (VII, p. 291).

2. The name of Scandia is common to *Aa* and Pliny (IV, 104). Pliny's identical name Scadinavia (IV, 96) may be compared with Mela's Codanouia (III, 6, 54).

3. Distinct knowledge of a large gulf behind the Cimbric Chersonese is common to *Aa*, Mela, Pliny (*ibid.*).

4. Distinct knowledge of a Cimbric Chersonese forms a prominent point of resemblance between *Aa*, Mela and Pliny (III, 3, 32, resp. II, 167, IV, 96). Strabo also knew of the Chersonese (VII, p. 292), — only he would not admit that it was situated north of the Elbe. Tacitus had no distinct idea of a Cimbric Chersonese, and at the stage of the Tab. Peutingeriana, this idea had disappeared from the horizon of the Romans.

5. Distinct knowledge of the Kimbroi as neighbours of the Charudes (= the present Himmerboers beside the Hardboers) betrays a close affinity between *Aa* and Augustus. Cf. Pliny's headland Chartris beside the Cimbri (IV, 97); but the name is also spelt Thastris.

6. The contiguity of the Cimbric Chersonese with the Teuton(oaroi) reflects Mela and Pliny who represent the Cimbri and Teutones as neighbours (III, 3, 32, resp. IV, 99). Both *Aa* and Mela, like Prot. *F*, represent the Teutones as a Baltic tribe, although with different localisation (*Aa* and *F*: in western Pomerania, or on the island of Rügen; Mela

(III, 6, 54): on the island of Codanouia, i. e. either Sealand or Scandinavia).

7. The absence of the Angles on the Cimbric Chersonese (in the district of Angel) is common to *Aa*, Strabo, Mela, and Pliny. This negative feature is in contrast to the scheme of Prot. *D* and Tacitus, the only two classical authorities to whom the Angles are known.

8. The Swabian group does not appear, for the Langobardoi *Aa* are mentioned without the addition of "Sveboi". It is similar to Pliny who does not represent the Hermunduri as belonging to the Swabian group. Mela, at the best, mentions the Swabians quite by the way¹). This scheme was a natural consequence of the fact that the great Swabian Empire, to which the Langobards belonged, had been ruined in the year 17 A. D. Strabo here differs from *Aa* and Pliny on equally natural grounds, because he wrote before the catastrophe mentioned and, consequently, still knew the Langobards as subjects of the Swabian Empire. A sharper contrast to *Aa* and Pliny is offered by Prot. *D* and Tacitus, for here the Swabians are emphasized in spite of their political downfall; it is a sort of metachronism which is avoided in the older set of evidences.

9. The sub-division of the Brukteroi is common to *Aa* and Strabo (VII, p. 291)²). The Tabula Peutingeriana represents them as undivided, whereas it knows of sub-divisions among the Franks. Tacitus directly asserts that the Brukteroi had lately been almost exterminated by their neighbours ("Germ." ch. 33)³). Consequently, we must assume that Prot. *Aa* originates from the times before the said catastrophe.

10. The Angrivarioi, according to *Aa*, are placed on the eastern side of the Weser, and the Kauchoi only occupy the coast region. According to Tacitus ("Germ." ch. 33 & 35), the Angrivarii had lately extended their territory towards the west, conquering the Bructeri. At the same time, the Chauci had advanced in eastern Hannoveria so far, that they touched the Chatti, i. e. the inhabitants of Hessen. Here again Prot. *Aa* represents the older stage.

So much for those authorities whom we may regard as forming the main milieu of Prot. *Aa*.

It still remains to add some few words concerning the eventual resemblance with the milieu of Prot. *D*, especially with Tacitus.

¹) Mela, III, 5, 45 mentions "Baeti" or "Boti" who are in Pliny's quotation of the same passage replaced by "Svebi" (II, 170).

²) The sub-division of the Chauks is more generally stated: by *Aa*, Strabo (Kaukoi & *Kaulkoi) VII, p. 291, Vellejus II, 106, Pliny XVI, 2, Tacitus, "Ann." XI, 19.

³) The words of Tacitus must not be taken quite literally. The Brukteroi were by no means exterminated, as they re-appear on the Tab. Peutingeriana, and still as a well-known tribe till the 9th century (Bede etc.).

The following cases must be taken into account.

- | | | |
|------------------|---|--|
| tribe Dulgubnioi | = | Dulgumnii, Tacitus, "Germania" ch. 34. |
| — *Eudusioi | = | Eudoses, Tacitus, "Germania" ch. 40. |
| town Askiburgion | = | Asciburgium, Tacitus, "Germania" ch. 3, Asciburgio
Tab. Peuting. (Askalington Prot. C). |
| — Nabalia | = | river Nabalia, Tacitus, "Historiae" V, 26. |
| — Fleum | = | fortress Flevum, Tacitus, "Annals" IV, 72. |
| — Siatutanda (!) | = | "ad sua tutanda", Tacitus, "Annals" IV, 73. |

Such cases cannot prove that Prot. *Aa* had the same close affinity with Tacitus as with the older geographers. The preserved remnants of Mela's and Pliny's works give only fragmentary ideas about the northern horizon of these authors. The horizon of Tacitus is much better exemplified, — we may suppose, that his preserved works illustrate his knowledge of Germanic tribes in a fairly exhaustive way. Thus it may be a mere accident that Ptolemaic tribes like Dulgubnioi and *Eudusioi re-appear only in the works of Tacitus and not in those of Mela, Pliny etc. We may add, that even if Mela and Pliny do not mention the fortress of Flevum, they know at least the Vlie-stroom, from which it has drawn its name (Mela Flevo, Pliny Flevus). The monstrous town of "Siatutanda" or "Protect-their-homesteads" is certainly fabricated on the base of the Tacitean "Annals", but it does not necessarily imply that the blunder was due to the author of Prot. *Aa*, — the name may just as well have been interpolated by a succeeding editor.

The main thing is the fact that the general topographic ideas of Prot. *Aa* harmonize with those of Mela and Pliny, and not with those of Tacitus. This fact remains unshaken in spite of the names mentioned which re-appear in Tacitean works.

i. Examination of Details.

It may be regarded as superfluous to comment upon all physical details of Prot. *Aa*. Their general correspondence with nature is striking, whereas nobody will demand of the first map of Denmark ever designed that it should be completely free from error. We may content ourselves with considering some special points which want explanation.

The islands of Alokiai have by some scholars been identified with the present Halligen along the west coast of Slesvig; so e. g. on the map of Germania in R. Kiepert's "Formae Orbis Antiqui", published 1914. This identification is improbable from the phonetic point of view, and quite impossible from the topographical. The classical form of the name would scarcely have begun with a Latin *H*, resp. a Greek spiritus asper, which might easily be dropped. The initial letter would rather have

been either *Ch* or *K*, in Latin *C*, and even if Ptolemy may drop any initial letter, there is no reason for this suspicion here unless the topography would lead us to it. The topography, however, directly excludes it, for the Alokiai, on the Ptolemaic map, are not the islands west of Slesvig, but clearly those forming the northern extremity of Jutland, as it was already stated a century ago by such Danish scholars as Bredsdorff.

The present Ptolemaic map certainly exaggerates the distance of the Alokiai from the southern shore of the Limfjord, but this representation need not belong to Prot. *Aa*, — it may be a part of the Ptol. constructor's artistic scheme of arranging the islets round the Cimbric Chersonese. Whereas the insular districts Ty and Vendsyssel north of the Limfjord are nowadays connected by an isthmus, the Ptol. map assumes the absence of this connection, as it leads 3 channels from the Limfjord directly into the bay of Jammer-Bugt. It is possible that the Roman observers were mistaken, but at the same time their error would be very explicable, for the middle part of the isthmus mentioned consists of hills arising to a considerable height within surroundings of low level: such a hilly country would like an island when observed from the sea at some distance (Bredsdorff). On the other hand, the possibility is by no means excluded that the Ptol. map may be right, for the Limfjord has changed its western outlet several times, and so it may very well have possessed an extra outlet towards the north. The general correctness of Prot. *Aa* speaks in favour of the latter alternative. Provisionally, we must leave the question unsettled, but it is possible that geology may in the future give a decisive answer. It has already been suggested, without any reference to Ptolemy's map, that channels from the Limfjord to the Jammer-Bugt existed about the beginning of our era. If such theories proved correct they would thus find their literary verification in the classical geography.

The Ptol. map of Scandia also requires some consideration. If we regard the design as given by the Cod. Urbinae 82, or by several other MSS., we shall not be particularly struck by its likeness. But as soon as we compare the corresponding Mount Athos map, we shall receive a different impression, cf. Fig. 27. Here there is an unmistakable individual likeness with the actual form of Scania. We notice: the point of Kullen, projecting towards the west; then the coast of the Sound with gentle inclination towards the south-east; then the south coast, running straight west-east; and finally the coast leading towards Blëking with strong north-eastward direction. It seems scarcely conceivable that such a naturalistic design could be merely accidental. In our opinion, it must be derived from the first-hand observations made by the Roman officers in the year 5 A. D.

The names recorded by Prot. *Aa* are to a great extent preserved till

mediæval or modern times in the local nomenclature. Frisioi = inhabitants of western Frisia. Their town Fleum, evidently named after the Flevus or Vlie Stroom. Chaimai, misplaced by Ptolemy, = inh. of the mediæval Hamaland south-east of the Zuyder Sea. Brukteroi = inh. of the mediæval Borahtra Gau. The Kauchoi in northern Hannoveria seem to be the O. E. Hugas whose name survived in the mediæval Frisian district of Hug-merki. Angrivarioi = the mediæval Angrarii, one of the main groups of the Saxons. Lakkobardoi or Langobards = the mediæval Bardi in the present district of Barden-Gau. Virunoi, read *Varinoi = the people who lived at the river Warnow in Mecklenburg; the Wendic tribe of Varnabi may have been their descendants who had adopted the nationality of the Slavs. Saxones = inhabitants of Holstein that was in mediæval tradition designated as "Saxonia antiqua", "Old Saxony". Sigulones = the O. E. Sycgas, mentioned in the Widsith poem beside the Saxons. Sabaliggioi = the present Sallingboers in Salling; their shire — in Danish Salling Syssel — in mediæval times extended farther south towards the centre of Jutland. Fundusioi, read: *Eudusioi, neighbours of the Charudes, are the sEdusii or Eudures mentioned by Cæsar as fellows of the Harudes on the expedition against Gaul in 58 B. C. Tacitus, "Germania" ch. 40, mentions the Eudoses beside the Angles as worshippers of the goddess Nerthus. The comparison with Cæsar and Tacitus shows that Ptolemy is right in placing the tribe among the Jutlanders. Charudes = the present Hardboers or Hasselboers in Hard-Syssel, a shire in western Jutland. They seem to have moved thither during the migration ages, as the Ptol. map places them on the east coast. Their ancient localisation may still be reflected by the district name of Hadsherred on the east coast, in mediæval times Harz Hæret (Werlauff). Kimbroi = Himmerboers in Himmerland, the mediæval Himer Syssel. Skandia = Scania, O. N. Skán-ey.

Among the Jutlandic tribes, we miss the Angles as inhabitants of Angel in Slesvig. Their absence, however, cannot surprise us, if we regard the fact that the exact observation of coast lines stops at the southern edge of the Baltic. The Roman explorers in the year 5 A. D. evidently did not land south of the Little Belt. We only hear of negotiations with the Kimbroi and Charudes who both lived north of this channel. Even if the explorers caught the names of some Mecklenburgers such as the Varini, such informations were merely sporadic, and we cannot wonder if other names from those vaguely described coasts were ignored, such as that of the Angles.

It is worth noticing that three of the Ptolemaic names of Jutlandic tribes are preserved by inhabitants of peninsular districts, viz. Sabaliggioi, Charudes, Kimbroi. Peninsular shape of districts always tends towards preserving the ancient names, cf. the cases of Kent and Cornwall.

j. Conclusion.

Prot. *Aa* must be called well verified, both from topographic, statistical, and literary points of view. It could scarcely be expected to betray itself more neatly.

Whereas the prototype does not especially enlarge our knowledge of the region between the Rhine and the Elbe, the description of the Cimbric Chersonese is a document of unrivalled importance in the cartographic history of Denmark. This map, designed during the expedition 5 A. D., was destined to remain the only map of Denmark worth speaking of for almost 1500 years. It was not surpassed till the Dane Claudius Clavus designed a map of his country, as it looked in the 15th century, and even he dared not emancipate himself from the famous Ptolemaic scheme¹).

§ 21. LOCAL PROTOTYPE *Ab* = SOUTH-WESTERN GERMANY.

a. Summary of Contents.

Prot. *Ab* is a special map, describing the Roman Limes Transrhenanus. It contains fortification lines, rivers, and numerous towns, but no tribes; no duplicates; Latin marks. The prototype would have been executed after the construction of the Vallum Hadriani, i. e. towards the middle of the second century A. D. Affinity with the Tabula Peutingeriana. Cf. Figs 1, 2, 4, 8—11, 30—31, and our article in Paul & Braune's "Beiträge zur geschichte der deutschen sprache und literatur", vol. XLI, pag. 17 seq., where we provisionally discuss the objections of an anonymous critic.

b. Ptolemaic Localisation.

On Ptolemy's map, Prot. *Ab* fills out the entire south-western corner of Germany.

The main part of *Ab*, i. e. between the upper Rhine and Danube, is roughly speaking correctly localised, but the northern and south-eastern extremities are misinterpreted or displaced in various ways.

The mouth of the river Vidros, in the region of the middle Rhine, was identified with the mouth of the river Ijssel or Vechte, debouching into the Zuyder Sea. Correspondingly, the river Amisias, an affluent of the Lahn, was mistaken for its larger name-sake, the present Ems which debouches into the North Sea (already suggested by C. Müller). It was obviously the existence of two rivers Amisias which mislead the Ptol.

¹) Cf. A. Bjørnbo and C. Petersen, "Der Däne Claudius Claussön Swart", 1909.

constructor. And the consequence was that the part concerned of Prot. *Ab* was stretched far too far towards the north.

Apart from this Procrustean extension, the rivers Vidros and Amisias have been subjected to various metamorphoses.

In reality, the Ptolemaic Vidros represents two rivers: one is the present Wied, debouching into the Rhine, and the other is the present Wetter, debouching into the Nied, an affluent of the Main. The actual courses of these two rivers have disappeared, being replaced by the north-western part of the Limes Transrhenanus.

The river Amisias, according to Ptolemy, starts east of the mountain Abnoba which reflects in its northern extremity the wing of the Limes in the Wetter district; and the homonymous town Amisia lies *east* of the Abnoba. In reality, the corresponding river Emisa or Ems starts from the north-western side of the Limes, where also the homonymous town Ems is situated. It is easy to understand that the Ptol. constructor felt obliged to "correct" the original map, as soon as he identified the river Amisias of the Limes region with its better known name-sake in north-western Germany.

The eastern outline of the Abnoba and the northern outline of the Albia reflect the Limes without displacement, but farther east the traces of Prot. *Ab* become less certain.

It might seem as if the eastern Limes had been absorbed by the Ptol. mountain Sudeta = Böhmerwald, but, on the other hand, details from the extremities of the Limes perhaps occur farther south. We must leave this question for the examination of details.

c. Definition of Limits.

Owing to the above-mentioned misconceptions of the Ptol. constructor, the northern extremities of Prot. *Ab* invade the area of prototype *Aa*. On the other hand, *Ab* is invaded by the contents of the dislocated prototype *C*, e. g. Nouaision (i. e. the present Neuss), Vargiones (i. e. Vangiones), Uispoi (i. e. Usipi), and Chaituoroi (i. e. Chattuarioi). The confusion, however, causes no serious trouble, as the towns and rivers belonging to the Limes region are generally easy to point out.

d. General Topographic Scheme.

If we subject the Abnoba and Albia to exact examination, using the design in the Cod. Urbinae 82, we shall notice that they betray a marked difference from other Ptol. mountains. The form of the two chains mentioned, especially of the Albia, contains traces of a more minute design than we are otherwise accustomed to. And, above all, both chains are interlarded with towns, a quite extraordinary feature in the Ptolemaic orography, cf. under the heading "statistical features".

The details constituting Prot. *Ab* must be spared for the heading *h*, where they will be properly discussed. Provisionally, we may only emphasize the observation that the traceable outposts of *Ab* cling to a series of distinctly visible physical lines which are all disguised expressions of Roman fortifications. The first section is the so-called river Vidros, the second is the mountain Abnoba, the third is the mountain Albia. Not all towns of *Ab*, it is true, lie west or south of this combined line, — there are about half-a-dozen of outsiders, viz. Stereontion, Munition, Amisia (with river Amisias), Kanduon, and Graunionarion. But almost all of these only lie at a short distance from the demarkation line, so that they may be regarded as what the French military language calls “*enfants perdus*”, i. e. advanced positions.

e. Statistical Features.

Prot. *Ab* is characterized by the presence of fortification lines and numerous towns, whereas tribes are lacking. All of the surrounding prototypes contain tribes, — so *Aa*, *B2*, *C*, and *D*. *Aa* and *D* have few or no towns.

Also a more intimate statistical examination of Prot. *Ab* shows its marked individuality.

Along the right border of the middle and upper Rhine, representing full two thirds of the entire river-course, Ptolemy has only one single town, viz. Tarodunon, the mediæval Zartuna, now Zarten. We might also count Mattiakon, the present Wiesbaden, but the map removes it far away from the river. On the other hand, the neighbouring mountains Abnoba and Albia are overloaded with towns, amounting to about 14. They are literally interlarded with towns, for Kantioibis, Devona, Segodunon, Lokoriton, and Melokabos are placed inside the mountain strip and the two first mentioned have given rise to “lowland cauldrons” on the copies designed by Donis, cf. Fig. 4.

Such a distribution, from the statistical point of view, is obviously absurd. We should have expected a dozen Rhenish towns for every single mountain town, not the opposite proportion. Especially, we miss Aurelia Aquensis, now Baden, the capital of the Grand Duchy of the same name, and Brisiacus, now Breisach, the capital of the district Breisgau. How did it occur to Ptolemy’s mind to distribute the population in this extraordinary way?

The explanation is no doubt to be sought in the assumption that the original map, used by the Ptol. constructor, did not really describe mountains, but another sort of geographical category. If we compare the design of mountains and forests in other parts of the atlas, we shall certainly find plenty of incisions, — e. g. the forest Gabreta in the New York MS. includes no less than four, corresponding to the town vignettes

of Eburon, Strevinta, Meliodunon, and Arsikva, cf. Fig. 4. But it rarely occurs that the mountains or forests are literally interlarded with towns; in the Valencia MS., map of Spain, we observe e. g. two cases, one in the Pyrenees, and the other in a south-eastern mountain, see the reproduction in J. Fischer's article, "Iberica" 1914, p. 105. After noticing this fact, it will strike the observer that the mountains Abnoba and Albia contain no less than half a dozen; we mentioned 5 above, and the MS. used by Donis must have added a sixth one, viz. Bomoi Flavioi, for here his design shows a corresponding "lowland cauldron".

It was this observation that first caused us to suggest that the original map of the regions concerned must have been a special plan of the Limes Transrhenanus, and our further investigations fully confirmed our assumption, as the reader will realize by regarding our commentary upon the topographic details.

The marked individuality of Prot. *Ab* also appears from the statistical classification, undertaken by Ptolemy on Germanic ground.

There are two Germanic districts, in which the authentic towns contain numerous instances of the second class. The one is the mercantile road from the Danube to the Prussian Amber coast, cf. § 21, e.; and the other is the region of the Limes.

In the following, we have made a synopsis of the classification, according to four of the best MSS., cf. p. 69.

Our synopsis is set forth with all reservation, as it is not always easy to make out the true significance of the vignettes in the various MSS. But at any rate, it seems to show that the distinction between the second and third class reflects an actual difference of importance. All of the 8 second class towns are situated inside the Limes, and most of them possess remnants of Roman fortifications. Mattiakon and Bomoi Flavioi are besides emphasized in various ways. The towns of the third class, on the contrary, are to a great extent situated outside the Limes, viz. Munition, Stereontion, Kanduon, and Grauionarion; and none of them seems to possess noticeable remnants of fortifications.

The Athos Atlas differs from the scheme of the other MSS., in so far as it emphasizes only three of the towns concerned: Amisia I cl., and Mattiakon and Bomoi Flavioi, II cl. This scheme is too isolated as to be regarded as Ptolemaic, but at any rate it reflects the geographical horizon of classical times. For the superior rank, attributed to Mattiakon and Bomoi Flavioi, corresponds to their actual importance, and this fact could scarcely have been known by a mediæval copyist.

Ptolemaic classification	Ptolemy	Ancient supplementary evidences	Modern continuation; remnants of Roman fortifications	Cod. Ambr. 527	Cod. Urb. 83	Cod. Burney 111	Cod. Urb. 82
First class	Amisia	Astronomic observations (Ptolemy). Perhaps = the fortress built by Drusus and restored by Germanicus (Tacitus)	{ Ems Remnants near Heftrich }	1	1	1	1
Second class	Mattiakon	Aquae Mattiacae, fashionable bathing place (Ammianus)	{ (Wiesbaden) } { Remnants }	2	2?	2	2
	Bômoi Flavioi	"Imperial Flavian altars"; the name translated into Greek (Ptolemy). Aris Flavis (Tabula Peutingeriana)	(Rottweil)	2	3	2	2
	Melokabos	.....	{ Miltenberg } { Remnants }	2	2	3	3
	Tarodunon	Tenedone (Tab. Peuting.)	Zartuna, Zarten	2	2	2	2
	Lokoriton	.....	{ Lorch, Lorch } { Remnants }	..	2?	2	2
	Alkimoenis	.....	town on the river Alcmona	2	2	2	2
	Kantioibis	.....	{ Gunzenhausen? } { Remnants }	2	2	2	2
Third class	Graunionarion	Grinarione (Tab. Peuting.)	Gröningen?, outside the Limes	3	3	3	3
	Rinsiaua	Biricianis (Tab. Peuting.)?	.....	..	3	2	3?
	Munition	.....	(Walhesdorf?), outside the Limes	..	2?	3	3
	Stereontion	.....	Strinz, outside the Limes	..	3	3	3
	Kanduon	.....	Kohden, outside the Limes	..	3	3	3
	Devona	.....	Dewangen??	..	2	3	3
	Setuako(ton)	Septimiaci VII (Tab. Peuting.)	.....	..	3	3	3
	Bibakon	.....	Biburg?, outside the Limes	..	3	3	3

Finally, one more statistical observation must be added. As we mentioned above, the towns of Prot. *Ab* cluster about the mountains Abnoba and Albia. East of these mountains, the Ptolemaic map suddenly discloses a relatively large region without towns, only filled with displaced tribe-names such as Kuriones = Buroi, Chaituoroi = Chattuarioi. Then

further east, in the region of the mountains Semanus and Sudeta, the towns begin again, among which the fictitious place Marobudon = "castellum Marobudui" (Tacitus, "Annals" II, 62), and the disguised mountain Bikurgion = Asbikurgion, Askiburgion, transplanted thither from north-eastern Bohemia.

It is obvious that the empty room marks the eastern limit of Prot. *Ab*. What lies farther east, is derived from other sources, such as the Tacitean Annals, the Ptolemaic prototypes *B₁*, *B₂*, *D* etc.

f. Occurrence of Duplicates.

It is not possible to point out a single obvious duplicate which is shared by *Ab*. The town-names within its sphere make the impression of containing no fancy repetitions. Apart from solitary invaders such as Nouaision, they seem to betray a pure and well preserved tradition.

g. Linguistic Marks.

Within the relatively limited number of names, belonging to Prot. *Ab*, we observe some noteworthy Latinisms.

Munition, the Latin appellative "munitio" = "fortress".

Vulgar Latin casus obliquus *-one* in *Munition* and *Grauionarion*. Cf. the correspondence to the latter name on the Tabula Peutingeriana: *Grinarione*. *Grauionarion* is perhaps a misread Latin word "granary".

Setuako-ton, = Septemiaci (VII) Tab. Peuting., seems to have been enlarged through misreading of the Latin figure VII. It must be noticed that the Athos Atlas adds the Latin figure LIII above Tarodunon, whereas the Tab. Peuting. writes Tenedone XIII. If the reading of the Athos MS. is no late interpolation, it must be connected with that of the Tab. Peuting. *Deouona* and *Rusiaoua* contain the typical Ptolemaic transcription of Latin *v*, not occurring in the sections drawn from Greek sources.

There are no Greek marks, except the translation *Bomoi Flavioi* instead of *Arae Flaviae*. In this solitary case, the importance of the town concerned makes the translation quite natural.

Whereas it is generally difficult to decide, whether the Latinisms belong to the local prototypes or to the collective one (*A*), the question in the present case seems easier to solve. Vulgar Latin forms such as *Munition* and *Grauionarion* are the typical mark of itineraria like the Tabula Peutingeriana. If the termination in *Setuako-ton* is to be derived from a Latin figure of road distance, it points decidedly towards a source of the same sort.

We therefore conclude that Prot. *Ab* has a marked linguistic individuality, betraying that this original map was a Latin document with the vulgar spelling, known from the itineraria.

h. Literary Milieu.

The chronological position of Prot. *Ab* is relatively easy to define. We know that the establishment of the Limes was begun under the Emperor Domitianus, continued under Trajanus (98—117 A. D.), and completed under Hadrianus (117—138 A. D.). As *Ab* contains at any rate the Vallum Trajani, it cannot have been designed earlier than about 100 A. D.; if it contained also the Vallum Hadriani, it would originate from after 117.

Corresponding to this chronological definition, there are no traceable affinities with the stage of Strabo, Mela, and Pliny, who all lived before the establishment of the Limes.

But the negative statement is of no great value, as the existing affinities with later Pre-Ptolemaic authorities are conspicuous almost exclusively by absence.

Tacitus, it is true, mentions the establishment of the Limes, but he supplies scarcely any local particulars which re-appear in Prot. *Ab*.

A vague affinity with Tacitus may be seen in the fact that the Ptolemaic place-names behind the Limes betray the predominance of Celtic nationality. Tacitus, "Germania" ch. 29, states directly that the corner between the Rhine and the Danube had lately been occupied by Celts from Gaul.

The important fortress Amisia at the north end of the Abnoba, as we mentioned above, may be connected with the fortress built in the Taunus mountains by Drusus and restored by Germanicus, see Tacitus, "Annals" I, 56.

All other traceable affinities with classical authorities seem to point towards Post-Ptolemaic times.

Affinity with Ammianus Marcellinus XXIV, 4: Mattiakon = Aquae Mattiacae.

Affinity with Vopiscus ch. XIII: Albia = Alba.

Affinities with the Tabula Peutingeriana:

Tarodunon (LIII?)	= Tenedone XIII.
Bomoi Flavioi	= Aris Flavis.
Grauionarion	= Grinarione.
Setuako-ton	= Septemiaci VII.
Riusiaua	= Biricianis? ¹⁾

An important common element of Prot. *Ab* and the Tab. Peuting. is the knowledge of that mountain which is in the former document called Albia, = the present Alb.

¹⁾ Suggested by C. Müller.

Also the eastern Limes, the Vallum Hadriani, may have been represented on both maps, although in disguised form. We mentioned above that the Ptol. constructor may have identified this part of Limes Map with the Sudetian mountains. On the Tab. Peuting., the Limes is obviously reflected by the so-called Danube, for the towns, placed "south" of this river, in reality belong to the region *north* of it and are the fortresses along the Limes: Samulocenis, Grinarione, ad Lunam, Aquileja, Opie, Septemiaci.

The southern part of Prot. *Ab* is evidently drawn from a document from which equally the corresponding part of the Tabula Peutingeriana must be derived.

The Tab. Peuting. contains nothing corresponding to the Ptol. map of the middle and northern Limes. We may compare the facts that Ptolemy and the Tabula are most intimately related with each other in northern, middle, southern, and south-western Dacia, whereas the Tabula lacks any sign of correspondence with Ptolemy's description of the eastern and north-eastern section. It seems that the selections were made from the source of the Ptolemaic map in an unequal manner by the author of the Tabula who left out entire sections for more or less arbitrary reasons.

i. Examination of Details.

The design of the original Prototype *Ab* seems to have been first-class.

Its present appearance has of course suffered deterioration through the Ptol. constructor, as we saw above. But even in the Ptolemaic disguise, several parts of Prot. *Ab* may still be used for the design of the Limes without altering a single stroke. Cf. the map accompanying the publications of the Limes Commission, and reprinted in Meyer's "Konversationslexikon", Art. "Pfahl"¹⁾.

We shall now try to identify the names contained in Prot. *Ab*, using as material the Ptolemaic Version I, especially Codex Urbinas 82.

The mouth of the river Vidros, as we mentioned above, corresponds to the present river Wied, debouching into the Rhine at the beginning of the Limes. From the linguistic point of view, the correspondence is not quite exact. Probably, the original form of the name was not directly Vidros, but at any rate resembled this name so much that the Ptol. constructor was led to make a mistake.

The so-called "river-course" of Vidros = the north-western part of the Limes. Notice the exact representation of the winding wall!

¹⁾ Sarwey, Fabricius & Hettner, "Der obergermanisch-raetische Limes des Roemerreichs". Heidelberg, 1895 seq.

Stereontion, town east of the "Vidros" = the present Strinz east of the Limes. It is subdivided into Strinz-Trinitatis & Strinz-Margarethä. The name appears on p. 41—52 of André's Atlas, 4th edition, where also most of the other modern names mentioned beneath may be found.

River Amisias, running parallel with "Vidros" = the mediæval Emisa, now Ems, running parallel with the north-western part of the Limes.

Fortress Amisia, represented as town of the first class, with three towers and astronomic observations, situated directly south of the head of Amisias = the present Ems, situated at the head of the homonymous river. It corresponds to fortress no. 9 on the map of the Limes commission, at the present place called Heftrich, close to Feldberg, the summit of the mountain Taunus. Singularly enough, this obviously important fortress is not mentioned directly in historical literature, but we may identify it with the castle built in the Taunus by Drusus and restored by Germanicus. Cf. Tacitus, "Annals" I, 56, describing the undertakings of Germanicus: "posito castello super vestigio paterni praesidii in monte Tauno, expeditum exercitum in Chattos movit." — The map of the Limes Commission contains a fortress called Ems, registered as no. 4, but in reality no. 6. We suppose that this place is not the ancient Amisia, which ought to lie at the head of the Ems, not west of this river, where the fortress no. 4 (6) of the Limes is situated.

Munitio, town on the river Amisias, = a Roman "munitio", or "fortress". The Latin word is most likely no proper noun, but simply marks the place of an anonymous fortification. It may be identified with the mediæval Walhesdorf, now Wallsdorf, if this place-name is to be translated "village of the Roman"; but of course it is equally possible that Wallsdorf is founded by a German with the name Walh i. e. Roman. — At any rate, the existence of advanced Roman fortifications outside the Limes is confirmed through the excavations undertaken by the Limes Commission in other regions. In the neighbourhood of the "munitio" concerned, we also find traces of Roman population, e. g. the mediæval Thabernae i. e. "taverns", now Dauborn, situated a little west of the river Ems.

River Vidros, upper part = the present Wetter. The latter form is the exact linguistic correspondence to Vidros, according to the law of "High German sound-shift" ("Lautverschiebung").

Northern end of the mountain Abnoba = the advanced wing of the Limes in the Wetter district. Roman place-names like Leitcaster, now Leihgestern, still accompany the remnants of the Limes in these regions.

Kanduon or Kaiduon, town east of Amisia and Abnoba, directly south of the western end of the mountain Melibokos, = the present Kohden, east of the town Ems and of the Limes (= Abnoba), and

directly south-west of Vogelsberg which forms the western continuation of the mountains Rön and Thüringer Wald (= Melibokos).

Mattiakon, town of the second class, inside the line Vidros-Abnoba = Aquae Mattiacae, "the Baths of the tribe Mattiaci", now Wiesbaden, inside the Limes; fortress no. 31 on the map of the Limes Commission. The Aquae Mattiacae are mentioned by Ammianus Marcellinus XXIX, 4. Like the present Wiesbaden, Mattiakon seems to have been a fashionable place for mineral baths.

Melokabos, town on the eastern side of the Abnoba, directly in the middle of its extension from the north towards the south = the present Miltenberg, directly in the middle of that part of the Limes which runs from the north towards the south; fortress no. 38 on the map of the Limes Commission. Stephanus of Byzance mentions the "ethnicon Melokabenos" which would imply that the place had a certain importance, but according to Alfr. Holder, "Altceltischer Sprachschatz", art. Melokabos, the statement of Stephanus is not true. The position of Miltenberg corresponds to that of Melokabos, as it commands the place where the Limes leaves the river Main. From the linguistic point of view, the correspondence is not quite exact, but the geographical coincidence is so striking that it leaves scarcely any doubt of the identity. If Melokabos is a Ptolemaic metathesis of Melibokos, as R. Much suggests (see Holder, l. c.), the change into Miltenberg would be less difficult to understand. The metathesis might also be of popular origin, for the German forms of ancient names along the Rhine, Neckar and Danube contain several cases of such irregularities¹).

Eastern outline of the Abnoba, between Melokabos and Lokoriton = the part of the Limes called Vallum Trajani, between Miltenberg and Lorch.

Western outline of the Abnoba south of Melokabos = 1) the fortification wall between the rivers Main and Neckar, called the Mümling Line; 2) the middle part of the river Neckar. Notice the south-eastward turning of the southern Abnoba, corresponding to the curving of the Neckar!

Lokoriton, town on the eastern side of the Abnoba, at the southern end of this mountain = the mediæval Loricha, now Lorch, at the southern end of the Vallum Trajani; fortress no. 63 on the map of the Limes Commission. Loko-riton is a Celtic name, meaning the "Ford of Lokos", consequently, a rivulet or brook running through the place must have had the name Lokos. From the linguistic point of view, the correspondence with Loricha is not quite exact, but the geographical coin-

¹) Borbetomagus, *Borvetomagus = Wormaza, Worms; Armissa = Rems; Brocomagus = Brumagad, Brumpt; Alkimoenis = Altmühl; Fergunna = Franken Höhe.

vidence seems to exclude doubts of the identity. Cf. the linguistic irregularities mentioned above.

Northern outline of the mountain *Albia* (perhaps continued by the Sudetian mountains) = the part of the *Limes* called *Vallum Hadriani*. *Albia* is the mountain called *die rauhe Alb* or *die schwäbische Alb*.

Grauiouarion, town north of the *Albia* and east of the *Abnoba* = *Grinarione* on the *Tabula Peutingeriana*. It may be the present *Gröningen* situated north of the *Vallum Hadriani* and east of the *Vallum Trajani*.

Setuako-ton, town south-east of *Lokoriton*, = *Septemiaci* on the *Tab. Peutingeriana*. The termination *-ton* seems to reflect the road distance (VII), added after *Septemiaci*.

The eastern and southern outline of the *Albia* would coincide with the north-western frontier of the Roman province called *Rætia*; *Ab* may have contained the demarkation line. The name of the Roman province persists till our days exactly in these regions, as *Riesz*, in mediæval times *Retia*, *Rezi*.

The western outline of the *Albia* would coincide with the upper course of the river *Neckar*.

Southern end of the *Albia* = southern end of the *Schwarzwald*, the so-called *Belchen*, which is connected with the southern parts of the *Alb*.

The *Helvetian desert* in *Prot. Ab* may have represented the same mountain which appeared as *Abnoba* on the collective orographic map of Germany, *Prot. A*, and thus would mean the *Schwarzwald*. In the *Burney MS.*, the map represents the *Helvetian desert* by a long line running in the direction SW-NE exactly where the *Schwarzwald* ought to be situated, cf. *Fig. 8*. But it may not yet be regarded as certain that this design is of classical origin.

Bomoi Flavioi, town of the second class, on the western outline of the *Albia* = *Aris Flavis* on the *Tabula Peutingeriana*, the present *Rottweil*, situated on the upper course of the *Neckar*. As its name shows, the town contained a temple with altars of the Imperial Flavian family, and consequently must be regarded as a district capital. This degree of importance is reflected by the Ptolemaic vignette. It is also noteworthy that the Latin name has been translated into Greek.

Tarodunon, town of the second class, north-west of *Bomoi Flavioi* = *Tenedone* on the *Tabula Peutingeriana* = the mediæval *Zartuna*, now *Zarten*, south-west of *Rottweil*. The town occupies a central position in the inner valley of the river *Dreisam*, whereas the entrance of this valley is dominated by the large city of *Freiburg*. We may suppose that the importance of the classical *Tarodunon* was due to the same factors which have made the present *Freiburg* grow large.

C. Müller in his edition of Ptolemy sets forth a series of suggestions in order to identify the Ptol. towns within the eastern area of *Prot. Ab*,

viz. Devona = Dewangen; Kantioibis = Gunzenhausen, fortress no. 71 on the map of the Limes Commission; Bibakon = Biburg¹); Brodentia = the mediæval Brenza or Prenza, now Brenz, situated on a homonymous river which debouches into the Danube; Riusiaua = Biricianis on the Tabula Peutingeriana.

Some of the towns concerned are situated within the Albia, whereas the others form a fringe closely connected with this mountain. Consequently, we may take it for granted that they belonged to the special map of the Limes region. If Müller's suggestions be correct, the arrangement would however have been more or less confused. As Prof. C. Mehlis is in near future publishing a detailed study of the Ptolemaic towns ("Petermanns Mitteilungen"), we think it advisable to refrain from positive statements till this special research of the topographical expert has appeared.

Alkimoenis on an anonymous affluent of the Danube is obviously named after the river Almona, now Altmühl, debouching into the Danube west of Regensburg. But it is not absolutely certain that the town and river actually belonged to Prot. *Ab*.

j. Conclusion.

Prot. *Ab* must be called well verified both from topographic, statistical and linguistic points of view, partially also from the literary. Its individuality is still more self-evident than that of Prot. *Aa*.

Regarding the Limes district, *Ab* has the same unrivalled importance as Prot. *Aa* regarding the geography of ancient Denmark. The light shed by this document on the working of the Roman military topographers must be called literally astonishing. *Ab* is equally important from the linguistic point of view, because it gives valuable information concerning the distribution of nationalities. We notice that the names inside the Roman Limes district are nearly all Celtic, the Imperial colony Arae Flaviae forming the only exception. Traces of German nationality appear on the frontier, viz. in the termination -is, added to the Non-German names Alkimoen(is) and Kantioib(is). Advanced Roman positions on German ground are marked by the names Amisia, Munition and Grauionarion, both of the latter showing the type of the vulgar Latin tongue. Cf. Figs 30 & 31.

¹) The name Biburg occurs repeatedly in the Danubian region. One is situated north of the Vallum Hadriani, a little east of Gunzenhausen; another on the southern side of the Danube, near the end of the Vallum.

§ 22. LOCAL PROTOTYPES *Ac*, *Ad* & *Ae* = DACIA AND ENVIRONS.

a. Summary of Contents.

Ac is a physical map of Dacia, with probably few or no towns. Executed perhaps before the Roman conquest. Correctly amalgamated with *A*. Cf. Fig. 13.

Ad & *Ae* are itineraries, describing Dacia; containing rivers, tribes, roads and towns. *Ad* and *Ae* are partially duplicates of each other; scattered duplicates besides occur in *B1*, *B2* & *F*. Latin marks. Executed after the Roman conquest of Dacia 105 A. D. — Affinities with the Tabula Peutingeriana (= the Anonymus Ravennas). The prototypes seem to have been amalgamated before the times of Ptolemy; the map resulting is roughly speaking correctly amalgamated with *A*. Cf. Fig.s 1 & 12—18.

b. Ptolemaic Localisation.

The correct localisation of Prot. *Ac* was a natural consequence of its distinct natural outlines. The region between the Carpathian mountains, the lower Danube, and the Pruth, is formed by nature in such a manner that it lends itself quite readily as a subject of separate description¹⁾. For similar reasons, it was easy to incorporate the physical map *Ac* correctly with the Pre-Ptolemaic collective map of Europe. The Danube, as the southern and western frontier of the region mentioned, was completely known beforehand, because it formed the frontier of the Roman Empire since the beginning of our era. And the large angle formed by this river within the region of modern Hungary offered a firm basis for the localisation.

Prot. *Ad* and *Ae* are placed within Dacian territory. They are so far localised correctly, and in our first article on the subject²⁾ we consequently assumed that Ptolemy's physical design of Dacia belonged to one of them. Through further investigations, however, we observed that neither *Ad* nor *Ae* agrees sufficiently with the physical map so as to be assigned to its original contents. This was the reason that obliged us to assume the existence of a separate physical map *Ac*, different from *Ad* and *Ae*. — Prot. *Ad* is limited to a narrow fringe, attached to the Ptolemaic rivers Danubios, Tibiskos, and Hierasos. Its interior elements have

¹⁾ The same law of geographical limitation is traceable in the extension of the Roman dominion over Dacia, and much later re-appears in the establishment of the Daco-Roman nationality.

²⁾ "The Scott. Geogr. Mag." XXX, p. 66.

suffered displacement both towards the east and towards the west. *Ae* fills out the interior part of the Ptolemaic Dacia, evacuated by the details of *Ad*. An inexperienced editor seems to have misunderstood the southern outlines of *Ae*, i. e. the rivers Danube and Aluta (and Theiss?), identifying them with the Transylvanian Alps of the physical map *Ac*. Thus he transplanted Saldensioi and Zusidava *Ae* (= Sallis & Sukidava *Ad*) from the southern side of the Danube to the northern, and the baths of Hercules (Hydata) *Ae* from the Iron Gate to the interior Dacia, and so on. — The incorrect combination of Prot. *Ad* and *Ae* re-appears on the Tabula Peutingeriana which is again reflected by the descriptive text of the Anonymus Ravennas that often supplies a better or more complete reading. Cf. Figs 15 and 16. In our research, we understand the Tabula as including the evidence of the Anonymus Ravennas, if no divergence is expressly stated.

Even if the Ptolemaic amalgamation of *Ad* and *Ae* with the physical framework of *Ac* is incorrect, the errors generally do not assume larger dimensions. There are no displacements of entire provinces, and the parallelism of the duplicate series is in most cases undisturbed. Only a few names have been transplanted far away from their proper places. Paloda or Polonda *Ad* has emigrated from west of the Aluta to the border of the Prut (Fig. 1). Sangidava *Ae* appears in *Ad* with the triplicate forms Singidava and Zargidava, the one in western Dacia, the other near the Dacian coast of the Black Sea. Three Danubian towns east of Potulatensioi *Ae* seem to have been moved too far east and placed in reverse order, viz. 1 Sornon, 2 Tiason, 3 Netindava, corresponding to the present 3 Soareni, 2 Teascul, 1 Nedeia. Cf. Figs 17 & 18. We suppose that they belong to Prot. *Ad*, but it cannot be made out exactly because they are ignored by the Tabula Peutingeriana.

c. Definition of Limits.

Ac may claim the entire physical details appearing on the Ptolemaic map of Dacia — mountains and rivers. The southern continuations of the Carpathian chain, lacking on the Ptol. map, seem to be traceable in the presumable outlines of Prot. *Ae*, cf. Fig. 13.

Ad and *Ae* seem to have supplied almost the entire tribes and towns of Dacia. The two prototypes at least claim so many of these details that very little is left which might be suggested as possibly belonging to *Ac*.

The mutual relations of *Ad* and *Ae* appear from the duplicate series compared with the Tabula Peutingeriana. The system of routes deduced therefrom is summarised below, cf. the detailed synopsis under i.

<i>Ad</i>	<i>Ae</i>
Aizizis—Tibiskon (= Tabula)	
Sallis—Zurobara	= Saldensioi—Ziridava; (with continuation Ziridava—Karrodunon = Tabula).
Dierna—Zarmizegethusa (= Tabula)	
.... Pinon—Sukidava	= Drubetis—Pirum—Zusidava (= Tabula).
a) Predav(a)—Singidava	} = Zusidava—Buridav(a)—Sangidava—Patridava (Karrodunon) (= Tabula).
b) Sukidava—Zargidava—Petrodava—Karsidava	

Differences from the Tabula may occur, but are of little import. They will be dealt with under the heading "general topographic scheme". Cf. also under "examination of details".

Apart from the displacements mentioned, we observe no confusion between *Ad* and *Ae* worth speaking of. On the Ptolemaic map, the two prototypes lie neatly beside each other. Only in the south-western corner, they wedge themselves a little into each other's areas, Frateria and Arkinna *Ad* invading *Ae*¹), and Saldensioi and Drubetis *Ae* projecting correspondingly into the territory of *Ad*.

The greater part of *Ae* seems to have been bounded by river-courses, viz. 1. the Danube from Gran to Semlin (or eventually the Theiss), 2. the Danube from Semlin to Nicopoli, 3. the Aluta. Only Saldensioi and Zusidava, = Sallis & Sukidava *Ad*, and perhaps Albokensioi, cf. under f, belong to the southern side of the Danube. We have not been able to discover sure traces of *Ae* west or south of the above line of demarkation; the further list of Cisdanubian duplicate names, collected in "The Scott. Geogr. Mag." XXX, p. 66, seems to be drawn from other sources, cf. under "duplicates". If Prot. *Ae* was thus limited by a line Danube—Aluta or Theiss—Danube—Aluta, we may assume that the duplicate map *Ad* had the same line of demarkation.

So much for the mutual relations of Prot. *Ad* and *Ae*. As soon as we leave Ptolemy's map of Roman Dacia, we miss almost completely their distinctive marks, i. e. the duplicate series, and also the Tabula Peutingeriana deserts us. We therefore see here provisionally no means of distinguishing the exact origin of the Ptolemaic elements. We may only point out collectively the extreme northern outposts of Ptolemy's Dacian prototypes which we shall here designate as *Acde* for want of interior distinction. Cf. Figs 14—15.

Outposts of *Acde* in these regions are the tribes Karpianoï, Tagroi, Biessoï, Sabokoi, Burgiones, Anartofraktioi, Koistobokoi *transmontanoï.

¹) Frateria and Arkinna = the present Fratesti and Arcan, see Figs 17—18.

The Karpianoï contrast with their alter-ego Harpioi and with the town Harpis. The "ethno-topic" combination of Harpioi and Harpis seems to indicate that these names belong to Prot. *F*.

The Burgiones contrast with their alter-ego Buroi in Germania, belonging to Prot. *B₁*, whereas the triplicate Kuriones *B₂* is pushed far away into interior Germania.

The frontier between *Acde* and *B₁* coincides with that of the Ptolemaic sections Sarmatia and Germania.

A whole series of displaced tribes from Prot. *E* collide with the north-western outposts of *Acde*, viz. Ombrones, *Ouarinoi, *Burgundiones, *Gutones, Finnoi, cf. § 26. We may also attribute to *E* some invaders in Roman Dacia. The Ratakensioi, as C. Müller suggests, p. 144, seem to be the Rakatriai *B₁* = Rakatai *B₂*. Kotensioi (or Kontekoi Athos Atlas) = *Kotnoi, *Koteinoi of *B₁* & *B₂* (= Kytnoi in Pannonia?). The Teuriskoi seem to be the well-known Celtic tribe of Tauriskoi in the "Hohe Tauern"; Strabo also calls them Teuristai, VIII, p. 293.

d. General Topographic Scheme.

The physical map *Ac* seems to have been of superior quality, like that of Germany. Cf. Fig. 13. It appears from the visible design of the rivers Tibiskos, Alutas, and Hierasos, but still more perhaps from the indirectly observed traces of the mountain system. We presume to have discovered them by pointing out the extension of our assumable Prot. *Ac*, for its outlines correspond too strikingly with the Transylvanian Alps; accidental coincidence seems to be scarcely conceivable. The likeness is especially conspicuous in the south-western corner where the Saldensioi *Ac* coincide with the isolated mountain chain projecting to the Iron Gate. The only natural explanation of this coincidence is the assumption that Prot. *Ac* contained a design of the Transylvanian Alps and that the outlines of Prot. *Ac* were identified herewith, owing to a misunderstanding on the part of that cartographer who amalgamated the two maps.

It may be regarded as questionable whether the almost complete separation of the eastern and western *Ad* (cf. Fig. 14 and p. 78) is original or whether it is due to the cartographer who amalgamated them. If we are right in identifying Singidava *Ad* with Zargidava *Ad* (= Sangidava *Ac*), there would be some reason for regarding the separation of the sections concerned as original: Singidava and Zargidava would mark the same route, drawn from different sources, and the author of *Ad* would have ignored the identity of both names, because he reached the station from two opposite points of departure.

The system of routes, as we may reconstruct it by comparing Prot.

Ad and *Ae*, sometimes differs from that of the Tabula Peutingeriana. Here the question arises which representation is to be preferred.

According to the Ptolemaic map, the stations Tiriskon and Argidava could without any difficulty be combined with the route leading from Hydata to Porolisson, belonging to Prot. *Ae*, and corresponding to the route Ad Aquas—Porolisso on the Tabula. But the Tabula combines Tivisco (= Tiriskon) with the route Tierna—Sarmategte, and Acidava (= Argidava) with the route Drubetis—Rusidava. The route Tierna—Sarmategte corresponds to a line Dierna—Zarmizegethusa in Prot. *Ad*, and this prototype would consequently claim the Ptolemaic station Tiriskon, if the evidence of the Tabula is to be regarded as decisive. In return, the Ptolemaic duplicate Tibiskon with its surroundings must then be assigned to Prot. *Ae*.

To begin with, we actually adopted this view, owing to the fact that the Tabula preserves the road lines which are eliminated on the Ptolemaic map. But later we realized that such an arrangement is impossible from the Ptolemaic point of view. We notice the following parallel of Ptolemaic road stations:

Ad: Sallis—Tibiskon—Zarmizegethusa—Zurobara—Singidava.

Ae: Saldensioi—Tiriskon—Zermizirga—Ziridava—Sangidava.

The correspondence leaves no doubt that we are here faced with an original route which has been eliminated by the author of the Tabula. He erroneously transplanted Tiriskon *Ae* to a fragmentary route of *Ad*, leading from the Iron Gate to Zarmizegethusa, and he transplanted Argidava *Ae* to another route of the same prototype *Ad*, viz. Drubetis—Zusidava.

Ptolemy places Karrodunon north of Porolisson, whereas the Tabula has a station called Cersie south of the latter town, and south of the Carpathian mountains. We identify Cersie—Karrodunon with the present Krosno north of the mountains (cf. p. 85). Consequently, the Ptolemaic representation seems to be more correct.

Dacia east of the line Pretorio—Apula—Porolisso is left blank by the Tabula, cf. Fig. 16. It seems, however, that the regions have not been completely eliminated, but appear with wrong localisation, transplanted to the south-eastern side of the Danube. Next to Sucidava in Moesia, the Tabula places a town Sagadava, = Sancidapa Anon. Rav., which is ignored by Ptolemy, by the Itinerarium Antonini, and by all other authorities. It seems to be the Ptol. Zargidava *Ad* from the northern side of the lower Danube = Sangidava *Ae*. In order to explain how it could be transplanted south of the river, we may suggest that the author of the Tabula identified the neighbouring Ptolemaic town Karsidava with Capidava in Moesia which is known from the Itin. Antonin. and also

from an inscription (*Capidavensis*). If the reader compares our figures 15 and 16, it will strike him that the Ptolemaic towns Porolisson—Napuka—Zargidava—Karsidava and the correspondences Porolisso—Napoca—Sagadava—Calidava on the *Tabula* occupy fairly corresponding positions. In both documents, a square figure is formed. A river separates Porolisson and Napuka from Zargidava, and equally Porolisso & Napoca from Sagadava. — Apart from Zargidava and Karsidava, no other towns from Ptolemy's eastern Dacia are traceable on the *Tabula*. The *Anonymus Ravennas* possesses an additional route running, as it seems, from the mouth of the river Tyras to Porolisson: Phira (Thira in Guido's Geography), Tirepsum, Iscina, Capora, Alincum, Ermerium, Urgum, Sturum, Congri, Porollisum, Certie. But apart from Thira, Porollisum, and Certie, the names have no likeness with Ptolemaic ones.

It must be added that the author of the *Tabula* has transplanted about a dozen towns from the northern side of the upper Danube to the southern. Moreover, he is guilty of a really Procrustean treatment of an entire region about the lower Danube. The surroundings of the river are represented as follows:

DACPETOPORIANI

Hostia fl. Danubii

LOCIVE' REGI.

The above words written with capital letters are to be read thus: *LOCI VI REGI(S) DAC(I) PETOPORIANI*, i. e. "the six places of the Dacian king Petoporus", and refer to a historical king Pieporus who was obliged to take shelter on Roman territory towards the end of the second century A. D. But the author of the *Tabula* has regarded these words as two tribal names, placing one half south of the Danube, and the other north-east of the Carpathian mountains. If he could commit such blunders, it is not too much to assume that he has transplanted the Dacian towns *Sangidava and Carsidava to Moesia.

The result of the above considerations is that the *Tabula Peutingeriana* shows, on certain points, a deterioration of the system of roads as represented by the pre-Ptolemaic map of Dacia. Here, Ptolemy proves superior, although his map contains no lines of roads.

Taking it as a whole, the combined evidence of the Ptolemaic prototypes *Ad* and *Ae*, verified by the *Tabula*, speaks so distinctly that it enables us to reconstruct the pre-Ptolemaic system of road lines with approximate certainty.

e. Statistical Features.

The physical map *Ac* contained mountains and rivers, perhaps also some tribes.

Ad and *Ae* were itineraries. We have mentioned above that the western limit of *Ae* seems to have been the river Theiss or Danube, cf. p. 79. The occurrence of tribes in both prototypes would appear from the duplicate Biefoi *Ad* = Piefigoi *Ae*. In other cases, the so-called tribes were in reality inhabitants of towns; cf. Predavensioi *Ad* = Buridavensioi *Ae* = Burridava Tab. Peut.; Saldensioi *Ae* = Sallis *Ad*, Saldis Tab. Peut.; Potulatensioi *Ae* = Paloda *Ad* = Potula Anon. Rav. The name Albokensioi (*Albonensioi?) evidently belongs to this class which besides re-appears in Moesia: Piarensioi = inhabitants of Appiaria; cf. C. Müller I, p. 444 & 463.

We notice the absence of the "ethno-topic denomination" which characterizes the neighbouring prototype *F*. And still, there would have been sufficient opportunity of introducing it, as so many alleged tribal names are in reality simple derivations of place-names. Due north-east of Dacia, several instances of the "ethno-topic" nomenclature appear: Harpioi with town Harpis, Tyragetai along the river Tyras, Amadokoi with Amadokian mountains & lake and town Amadoka, etc.

The principal contents of *Ad* and *Ae* were series of towns, connected by road-lines.

In the independent northern periphery of Dacia, assigned to the Ptolemaic "Sarmatia", no towns are recorded. This absence of towns forms a contrast from the scheme of *BI* which continues the town series towards the mouth of the Vistula on the Germanic side of the river.

The Ptolemaic map of Dacia contains two towns of the first class, viz. Zarmize-gethusa and Salinai. Both are used as points of astronomic observation and on the map decorated with three towers; Zarmize-gethusa is besides distinguished by the adjective "royal". The duplicate Zermizirga Prot. *Ae* misses the distinctive mark. The same representation of the duplicates appears on the Tabula Peutingeriana: Sarmategte with vignette, and Germizera without. Zarmize-gethusa is the well-known residence of the Dacian king Dekabalos; hence the adjective "royal". It may be regarded as probable that the place had some sort of distinguishing vignette already in Prot. *Ad*. — Salinai must have been an important saltern. It belongs to the very limited class of civil Roman establishments, appearing on the Ptolemaic map. The class has only two other representatives, viz. Hydata and Pirum (dupl. Pinon); and Salinai is the only establishment of industrial character.

The Athos Atlas, differing from the context and from the Urbinas Atlas, assigns Salinai to the second class only, expressed by a vignette

with five battlements. This scheme is certainly not original, but still the variety may be derived from classical sources. At least, it is worth noticing that the Athos Atlas, differing from the context, places also Praitoria Augusta in the second class. As this town, according to its name, must have been an important Roman garrison, the mark of the second class indicates a correct knowledge of its rank. — The Tabula Peutingeriana represents Salinis without vignette and so far is rather akin to the Athos Atlas than to the ordinary Ptolemaic scheme.

Hydata, i. e. "Baths", lacks distinctive marks in context and atlas, but the Ptol. description still attributes to the place a certain importance, appearing from the fact that its Latin name has been translated into Greek. On the Tabula, the corresponding town Ad Aquas has the usual vignette denoting bathing establishments.

Ptolemy has another Greek translation on Dacian ground, viz. Zeugma, i. e. "Bridge" = Pons Trajani. It is the important military bridge built by the Emperor Trajanus near the Iron Gate.

It is perhaps possible that Salinai, Ad Aquas, and Pons Trajani, had some distinguishing marks at the pre-Ptolemaic stage, but we must leave the question undecided.

f. Occurrence of Duplicates.

It will scarcely be necessary to point out the identity of all the names, indicated as duplicates of each other on Fig. 14. In most cases, the identity will appear obvious from the corresponding order of the entire series, originally taken from itineraries. Only in some few cases, our assumptions require more detailed commentaries.

The royal Dacian capital Zarmizegethusa is generally assumed to be different from the neighbouring Zermizirga, or Germizirga, — as the name is written in Codd. Paris 1403 & Vatican. Palatin. 314. C. Müller re-discovers Germizirga in the town Germisara, mentioned by a Latin inscription ("no. 1395"), and again identified with Germizera of the Tabula Peutingeriana, = Germigera of the Anonymus Ravennas. The distance from Zarmizegethusa to Germigera seems indeed insuperable. But, as a matter of fact, the chasm between these apparently irreconcilable forms is filled out by a large number of orthographic varieties. We have already mentioned the varieties of Zermizirga; those of Zarmizegethusa are still more numerous. Ptolemaic MSS.: Zarmigethusa, Sarmisegethusa, etc.; inscriptions Zarmizegetusa & Sarmizegetusa; Tab. Peut. Sarmategte; Anon. Rav. Sarmazege; Dio Cassius LXVIII, 9: Zermizegethusa; cf. the river *ibid.* ch. 14: Sargetias, i. e. *Sar(mati)-getias. It is obvious that there existed several pronunciations, viz. one Sarmatian, another Dacian, a third Roman, and the result was a chameleonlike spelling. When one name was thus spelt Zermizegethusa, Sarmazege,

Sarmategte, (Sargetia-), there is practically little divergence from the form Zermizirga. On the Ptol. map, the two are placed close to each other, and modern cartographers still reduce the distance, assuming a localisation which would make the one a suburb of the other from the point of view of a Londoner. After all we must take it for granted that these would-be-separate towns with almost identical names of a solitary type are in reality one and the same.

Another equation which may at the first sight seem questionable is *Potula *Ac* = Paloda or Polonda *Ad*. The two Ptol. towns do not occupy corresponding positions within the duplicate series of *Ac* and *Ad*. And both of the differing forms seem to be confirmed by the literary test material: Potula is mentioned by the Anon. Ravennas, whereas the Tab. Peuting. contains the form Pelendoua recalling the Ptolemaic Polonda. However, a more detailed examination leaves no doubt that Potula of the Anon. Ravennas is precisely the Pelendoua of the Tabula. These two authorities generally register the same series of names, but there is a difference of arrangement in so far, as the Anon. Ravennas introduces a distinction between two districts, "Mysia", and "Dacia". Thus, e. g., the author makes a break in the route Sarmazege—*Tierna (Tema) at Augmonia which is the last station within the so-called district of Mysia. The "Dacian" part of the route is read from the opposite end, and when Tibis (Tibiscum) is reached the author states expressly that it is connected with Agmonia in the district of Mysia: "quae coniungitur cum civitate Agmonia patriae Mysiae". When describing the other routes, he does not point out the continuation from Mysia to Dacia, but in spite of the interrupted enumeration, no single fragment of any route is omitted. We are thus able to state that the Peutingerian series Romula, Castris novis, Pelendoua . . . Drubetis is rendered by the Anon. Ravennas thus: Romula, Canonia, Potula, Bacaucis. Canonia is evidently a misunderstood abbreviation *Ca. noua* = *Castra nova*, and the following Potula must be identical with Pelendoua, at the same time coinciding with the place of the Potulatensioi on the Ptol. map.

Our equation Karrodunon *Ac* = Karsidava *Ad* is supported by the Tabula which replaces Karrodunon by Cersie = Certie of the Anon. Rav. It seems to be the present Krosno north of the Carpathian mountains, cf. p. 81.

Singidava *Ad*, Zargidava *Ad*, and Sangidava *Ae*, seem to represent a case of triplication. Zargidava = Sagadava of the Tabula, Sancidapa of the Anon. Rav.; Sangidava = Acidava of the Tabula, and Sacidava of the Anon. Rav. We have discussed on p. 80, how it can be explained that the author of Prot. *Ad* repeats the name of the station. The displaced localisation of Sagadava on the Tabula is pointed out on p. 81.

Argidava *Ae* has no Ptolemaic duplicate. When C. Müller places the

name near the Theiss, i. e. within the area of Prot. *Ad*, it is due to a conjecture of Wilberg's. But on the Tabula, the place actually belongs to the duplicate series, appearing as Arcidava near the Theiss = Prot. *Ad*, and as Acidava near the Aluta = Prot. *Ae*. The form Acidava is different from its above-mentioned namesake which is a mutilated form of Sancidava = Sangidava Ptol.

In "The Scott. Geogr. Mag." XXX, p. 66, we assumed that the duplicate series of *Ad* & *Ae* continued west of the middle Danube, finally reaching the northern corner of the Adriatic. They would contain, e. g., two Mursella in Pannonia, Sirota = Sisopa ibd., and in Istria Alvôna = Alvon, i. e. the ancient and present Albona. These cases are perhaps too scattered to form a solid basis for assuming the continuation of the two prototypes west of the Danube. But the duplicate Sallis *Ad* = Saldensioi *Ae* at any rate shows that they contained some parts of the Cisdanubian provinces, viz. the Pannonian district round the inferior Save¹).

The possibility is not excluded that the so-called Dacian tribe Albokensioi north-west of Saldensioi may be a misreading of *Albonensioi. In this case, it would belong to *Ae* and its duplicate would be Alvona, belonging to *Ad*, whereas Alvon would be a triplicate form, derived from another prototype. Neither the Tab. Peuteng., nor the Anon. Ravennas, it is true, connect Saldis and Albona through a direct route. But on the Tabula, a route from Saldis to Aquileja almost touches Albona (Alvona), and the Anon. Ravennas represents Albona as the starting point of an Illyrian route (p. 224, ed. Pinder & Parthey).

The duplicates which the surrounding prototypes have in common are so few that they do not contribute essentially to illustrate the making of the Ptolemaic Dacia. We have noticed: Karpianoï = Harpioi *F*, and Burgiones = Lugoï Buroi *Br*, Kuriones *Br*. Cf. § 26 & 23.

g. Linguistic Marks.

Latinisms prevail in Dacia and its surroundings.

Dacia: the Latin word *Salinaï*; *Pirum*; *Angustia*, *Sangidava*, *Singidava*, *Zargidava* (< **Zangidava*).

Sarmatia: the Latin adjective **transmontanoi*; the Latin termination in *Karpianoï*; *Piengitai*.

Moesia: *Karsum*, *Singidunon*.

Pannonia: the Latin dative plur. in *Sallis*; two *Akuminkon*, *Akvinkon*.

¹) The following duplicates suggested in Pannonia inf. are questionable: Lussonion—Lugionon, Berbis—Serbition. Karrodunon in Vindelicia is no duplicate of its Ptol. name-sake in Pannonia, but must be amended into Parrodunon, cf. C. Müller, I, p. 284.

There are no typical Greek marks. The translation of *Ad Aquas* into *Hydata*, and of *Pons* into *Zeugma* may have been undertaken by the Ptol. constructor.

The presence of Latinisms and the absence of Greek marks forms a contrast from the sphere of Prot. *F*.

h. Literary Milieu.

The physical map *Ac* may originate from the first century of our era. The Romans would have been able to draw a "blind" map of *Dacia* before actually conquering the country: this fact appears sufficiently from Prot. *A*, i. e. Ptolemy's excellent physical map of unconquered Germany. Already before our era, the Romans knew the dimensions of *Dacia*, as it is stated by Agrippa in his Commentaries: "*Dacia, Getica finiuntur ab oriente desertis Sarmatiae, ab occidente flumine Vistula, a septentrione Oceano, a meridie flumine Histro. quae patent in longitudine milia passuum CCLXXX, in latitudine qua cognitum est milia passuum CCCLXXXVI*"; cf. Müllenhoff's "*Germania antiqua*", p. 49. — And about this time, *Dacia* was regarded almost as a dependency of Rome, see Strabo's *Geography VII*, p. 305, written in the first decades of our era.

The itineraries *Ad* and *Ae* necessarily must represent a later stage. As they contain the names of Imperial garrison cities, such as *Prætoria Augusta*, it follows naturally that the date of origin should be later than the Roman conquest of *Dacia* 105 A. D.

We have mentioned above that the combination of Prot. *Ad* and *Ae* re-appears on the *Tabula Peutingeriana*. The next question is to define the relations of these maps more exactly.

There must be a preliminary statement of three alternatives:—

1. The original itineraries might have been combined independently by the Ptol. constructor and the author of the *Tabula*.
2. The Ptolemaic map of *Dacia* might be the source of the corresponding section of the *Tabula*.
3. The Ptolemaic map of *Dacia* and the corresponding section of the *Tabula* might be derived from a common source in which the original local itineraries were already combined.

Alternative no. 1 may be regarded as excluded. The map of *Dacia* in its Ptolemaic shape agrees too well with that of the *Tabula*. Even if the towns mentioned are not always the same, not one route of the *Tabula* is omitted on the Ptolemaic map of *Dacia*¹). And the *Tabula* has

¹) The Anon. *Ravennas* contains one additional route, *Phira—Certie*, see p. 82.

several Ptolemaic duplicates, viz. Tivisco—Tivisco, Sarmategte—Germizera, Sucidava—Rusidava, Sagadava—(S)acidava.

Alternative no. 2 is equally excluded. For the Tabula contains a system of road lines which does not appear on the Ptolemaic map. The lines, it is true, are not always drawn correctly, but the general coincidence with the Ptolemaic arrangement of towns is unmistakable and thus points towards inheritance from an older source.

Alternative no. 3 is preferable. The Ptolemaic map of Dacia and the Tabula are co-ordinate descendants of one large original map which already contained the prototype *Ac*, *Ad* and *Ae* in amalgamated form. Both of the descendants preserve certain individual features of the original: Ptolemy has the relatively correct physical design and the larger number of duplicates, whereas the Tabula has the road-system. It must be added that the Tabula seems to have been influenced by the editorial scheme of certain Ptolemaic MSS. Germizera of the Tabula recalls the reading Germizirga in the Codd. Paris 1403 & Vatican. Palat. 314, instead of Zermizirga; Pelendoua of the Tabula reminds Polonda in the Cod. Vatican. 191, instead of Paloda.

After we have so far pointed out the genetic relations of the Ptolemaic map and the Tabula, we may try to investigate the editorial chronology still more exactly by means of the nomenclature.

First stage. The physical map *Ac*, probably designed before the Roman conquest of Dacia, and containing no detailed nomenclature.

Second stage. A pair of itineraries *Ad* & *Ae*, duplicates of each other, describing the lately conquered regions along the Danube, the Theiss and the Aluta; containing one important garrison city, Prætoria Augusta, and one more station with a Latin name, Pirum *Ac* (= Pinon *Ad*); otherwise, the nomenclature is at this stage purely Dacian.

Third stage. The originally identical series of *Ad* & *Ae* are enlarged with individual characteristics. Those of *Ae* denote the constant spreading of the Roman nationality, appearing in the names Salinai and Hydata = Salinis and Ad Aquas on the Tabula. Ulpianon, probably belonging to *Ae*, is the garrison city of a Cohors Ulpia. Perhaps, *Ad* was at this stage enlarged with the station *Pons (= Ptolemy's Zeugma). — The most important enlargement since stage II is the continuation of the route Saldis—Ziridava to Porolisson and through the Dukla defile to Karsidava (Karrodunon) north of the Carpathian chain. This is a well-known military and mercantile road, partially built by the Cohors Ulpia, as stated in an inscription. Cf. under "examination of details", p. 94. It is a natural development that the individual contents of Prot. *Ae* advance most conspicuously in the northern regions.

Fourth stage. The prototypes *Ac*, *Ad*, and *Ae*, are amalgamated. The road-system of *Ad* and *Ae* is still preserved. It is questionable whether the process of amalgamation should be attributed to Marinus or to a predecessor of his.

Fifth stage. The amalgamated map *Acde* is incorporated with the Ptolemaic atlas. The road-system is eliminated. The nomenclature still remains chiefly Dacian.

Sixth stage, post-Ptolemaic. The amalgamated map *Acde* is incorporated with the prototype of the *Tabula Peutingeriana*. Some 25 new names are introduced, almost all of Latin origin. The additions contain only some three names of Dacian origin, viz. *Bersovia*, **Cebonie*, *Arutela*. *Bersovia*, a station on the present river *Berzava*, was already mentioned by the Emperor *Trajanus*, and so it may be a mere accident that the other non-Ptolemaic names of Dacian origin are not preserved in any documents dating from before the times of the *Tabula*. **Cebonie* (*Cedonie Tabula*) is the present important town *Cibin* or *Szeben* on a homonymous river. *Arutela* may be a mutilation of a Latin **Ara Tutelae*, according to *C. Müller*, I, p. 447¹⁾. It is evident at any rate that the Dacian map of the *Tabula* has been completed after the final triumph of Roman nationality.

It remains to discuss the provenience of the Ptolemaic tribes *Koistobokoi* **transmontanoi*, *Biesso*i and *Sabokoi* in independent *Dacia* north of the *Carpathian* mountains. The *Koistobokoi* fought against Rome in the *Marcomannian* war, according to *Julius Capitolinus*, *Bell. Marcom.* ch. XXII. The *Biesso*i and *Sabokoi* probably did the same, according to *Müllenhoff's* emendation of the corrupt names "-*bessicobotes*" in the list given by *Julius Capitolinus*. Thus the part concerned of the Ptolemaic map would seem to contain elements which were partially unknown to the Romans, before the *Marcomannian* war burst out, i. e. 166 A. D. Under this presumption, the elements concerned could not have belonged to the stage before *Ptolemy*, but would have been introduced by himself. On the other hand, the possibility is not excluded that the said Dacian tribes should have become known to the Romans even earlier, owing to the intercourse on the mercantile road to the *Prussian* amber coast since the age of *Pliny*. We must leave the question unsettled.

¹⁾ The name *Brucla* on the *Tabula* sounds non-Roman, but it is an illusion as appears from the correct spelling *Brutia*, preserved by the *Anon. Ravennas*.

i. Examination of Details.

It remains to comment upon the details of the Ptolemaic Dacia and Jazygia according to their positions within the system of routes.

In order to investigate the details of the Roman routes, C. Müller lays great stress on the road distances indicated by the *Tabula Peutingeriana*. We cannot admit this valuation as quite justified, so far as Dacia is concerned. For the *Tabula*, as we have shown above, derives its description of Dacia from a map which already contained the prototypes *Ad* and *Ae* in the incorrectly amalgamated form. Moreover, the *Tabula* adds to the confusion. Names such as *Rusidava*, *Tivisco No. 2*, *A(r)cidava No. 2*, are introduced at wrong places, thus disturbing the road measurements concerned. *Cersie* and *Porolisson* seem to be interchanged, etc. And whereas the final editor of the *Tabula* might easily correct measurements within all the then existing provinces of the Empire, he was prevented from undertaking such corrections in Dacia, because this province had been lost to the barbarians for a full century, when the *Tabula* was published. — Under such circumstances, we regard it as provisionally impossible to use the Dacian figures of the *Tabula* as the basis for definite calculations. No positive results can be extracted from them, until the genetic relations of Ptolemy's map and of the *Tabula* have been thoroughly examined.

After these preliminary remarks, we shall give a general synopsis of the routes concerned and then proceed to the examination of particulars. (See *Tab.* p. 91.)

Synopsis of Routes

Common basis:
the Danubian
region

I, 1. Tab.

Ad

(Saldis), Arcidava, Azizis, Tivisco No. 1
Sallis, Aizizis, Tbiskon

I, 2. *Ad**Ae*

Sallis, Tibiskon, Zarmizegethusa, Zurobara, Singidava
Saldensioi, Tiriskon, Argidava, Zermizirga, Ziridava, Sangidava

I, 3. Tab.

Ae

..... (Tivisco No. 2), (Acidava), ad Aquas, Germizera, Apula, Salinis, Patavissa, Napoca, Cersie, Poroliso, $\Delta\Delta\Delta\Delta$
Saldensioi, Tiriskon, Argidava, *Aqua, Zermizirga, Ziridava, Apulon, Salimai, Patruissa, Napuka, Porolissos, $\Delta\Delta\Delta\Delta$, Karrodunon

II. Tab.

Ad

Tierua, Pretorio, *Agmonia (Anon.), Sarmategte
Dierna, Frateris, Akmonia, Zarmizegethusa

III. Tab.

Ae

Drubetis, Amutria, *Potula (Anon.), Rusidava
Drubetis, Amutrition, Potula, Zusidava

IV. Tab.

Ae

Rusidava, Burriddava, Pretorio, (S)acidava, Apula, (1, 3 \ggg \rightarrow Cersie $\Delta\Delta\Delta\Delta$)

Zusidava, Piefgoi, Buridavensioi, Praitoria-Augusta, Sangidava, Apulon, (1, 3 \ggg \rightarrow $\Delta\Delta\Delta\Delta$ Karrodunon)

(Zurobara), Biefoi, P(u)redavensioi, Singidava, (\ggg \rightarrow $\Delta\Delta\Delta\Delta$)

Sukidava, Angustia, Zargidava, Karsidava $\Delta\Delta\Delta\Delta$

1. More remoter stations of correspondence, communicating with the routes I, 1, I, 2, I, 3 (and eventually with II).

We mentioned on p. 86 the possibility that the present town Albona in Istria belonged to the prototypes *Ad* & *Ae*, as *Alvôna Ad* and *Albokensioi Ae* = *Alvona Tabula*, *Albona Anon. Ravennas*. Certainly, the *Tabula* does not connect *Alvona* directly with the system of Dacian routes. But the *Anon. Ravennas* at least represents *Albona* as the starting point of an Illyrian route. Apart from its occurrence as *Alvôna Ad* and (?) *Albokensioi Ae*, a third Ptolemaic prototype recorded the place as *Alvon*. Undoubtedly, *Albona* possessed a certain importance, still to-day reflected by the fact that it is the one of the two sole surviving Roman towns on the east coast of Istria amidst a population of immigrated Slavs. The gulf of Quarnero, on which *Albona* is situated, is the one main entrance to the road leading down the *Save* valley, the most direct route from Italy to *Dacia*. Such circumstances make it easily conceivable that *Albona* has, as it seems, become the starting point of the western systems of routes in *Ad* and *Ae*.

If the occurrence of *Albona* in *Ad* and *Ae* is still questionable, it is all the more certain that a nearer starting point of the western Dacian systems of roads was formed by *Sallis Ad* = *Saldensioi Ae* = *Saldis Tabula* & *Anon. Ravennas*; i. e. **Saldae* in grammatically correct Latin. The town was situated on the southern border of the inferior *Save* and, according to the *Tabula*, directly connected with that route which crossed the *Danube*, entering Dacian territory near *Arcidava*. *Saldae* is mentioned nowhere except by the four authorities mentioned, but its appearance in *Prot. Ae* is sufficient to prove its character as a starting point.

2. Route I, 1.

Tab.	<i>Saldis</i> ,	<i>Arcidava</i> ,	<i>Azizis</i> ,	<i>Tivisco</i> no. 1.
<i>Ad</i>	<i>Sallis</i>,	.....	<i>Aizizis</i> ,	<i>Tibiskon</i> .

After *Saldis*, the next main station is *Viminatio*, according to the *Tabula*, i. e. the well known city of *Viminacium* in *Moesia superior*, due east of the mouth of the *Morava*.

Arcidava Tab. follows directly after the route has passed the *Danube*. This name is lacking in *Ad*, but its duplicate *Argidava* = *Acidava Tab.* appears in *Ae*, belonging to route I, 2, and situated at a considerable distance east of *Tiriskon* i. e. *Tivisco* no. 2, *Tab.* The order is reversed: *Arcidava*, *Tivisco* in I, 1, *Tiriskon*, *Argidava* in I, 2; probably, it is the *Tabula* that is mistaken.

Aizizis Ad = *Azizis Tabula*. The Emperor *Trajanus* writes that he went from *Berzobis* to *Aizis*, cf. *Priscianus* VI, p. 682 ("Auctores gram. Lat.", ed. Putsch). Consequently, *Aizizis* must lie in the neigh-

bourhood of the present river Berzava, debouching into the Temes from the south. According to an inscription, a god named Azizus was worshipped in the Dacian town Patavissa, cf. C. Müller, I, p. 449.

Tibiskon *Ad*, Tivisco no. 1 Tab., re-appearing as Tiriskon *Ae*, Tivisco no. 2 Tab., belonging to route I, 2. It is probably the present Temesvar. Ptolemy erroneously attributes the name Tibiskos to the river Theiss, Hungarian Tisza, whereas it is in reality preserved by the river Temes.

Ptolemy places Tibiskon south of Aizizis, almost at the mouth of the Temes. We suppose that this localisation is due to the general displacement of Prot. *Ad* in the region concerned. The true sequence seems to be: 1. Viminakion, south of the Danube; 2. Aizizis, near the Berzava, i. e. south of the Tibiskos; 3. Tibiskon = Temesvar.

3. Route I, 2.

<i>Ad</i>	Sallis,	Tibiskon,	.....	Zarmizegethusa,	Zurobara,	Singidava.
<i>Ae</i>	Saldensioi,	Tiriskon,	Argidava,	Zermizirga,	Ziridava,	Sangidava.


This route may be regarded as a continuation of I, 1, yet with a partially altered line: the stations Tibiskon and Argidava re-appear, whereas Aizizis is omitted.


The first station on the continued route is Sarmisegethusa (Zarmizegethusa) *Ad*, Zermizirga *Ae* = respectively Sarmategte and Germizera of the Tabula. It is the terminal station of route II, capital of the Dacian king Dekebalos and hence called "royal" by Ptolemy; point of astr. observation, Ptol.; vignette with towers, Ptol. & Tabula. The name signifies a racial mixture of Sarmates and of Getes, i. e. Dacians; it is besides attributed to the river Sar(mati)-Getias, the present Sztrigi or Streiu, which flows past the town, cf. p. 84.

Zurobara *Ad*, Ziridava *Ae*, next station. Perhaps the present Szerda hely east of the river Sztrigi. Ziridava is the right spelling.

Singidava *Ad*, Sangidava *Ae*, terminal point of correspondence, otherwise belonging to route IV. Cf. this route.

4. Route I, 3.

Tab. (Saldis),	(Tivisco no. 2),	(Acidava),	ad Aquas,	Germizera,	} 
<i>Ae</i> Saldensioi,	Tiriskon,	Argidava,	*Aquae,	Zermizirga,	Ziridava,	

	{	Tab. Apula,	Salinis,	Patavissa,	Napoca,	Cersie,	Porolisso,	△△△△
		<i>Ae</i> Apulon,	Salinai,	Patruissa,	Napuka,	Porolisson,	△△△△,	Karrodunon.

The larger part of this route is identical with I, 2. But from Apulon I, 3 continues due north, whereas I, 2 turns towards the north-east in

the direction of Singidava—Sangidava. And the Tabula does not make the route start from Saldis or from any other western point of correspondence, occurring in *Ae*, but places the starting point within Dacian territory, viz. at the station ad Aquas = Hydata *Ae*. In our opinion the route can scarcely have contained both Tibiskon and ad Aquas; the beginning must be: either Tibiskon—Zarmizegethusa, i. e. from the Danube along the Temes to the Sztrigi; or ad Aquas—Zarmizegethusa, i. e. from the Danube (Iron Gate) along the Cerna to the Sztrigi. The exact coincidence between *Ae* and the Tabula makes it most plausible to conclude that the route leading to Porolisson started practically at ad Aquas, even if it were thence connected with the more remote station of correspondence Saldae, belonging to the routes I, 1 and I, 2.

The starting point Hydata *Ae* = ad Aquas Tabula must be placed in the immediate neighbourhood of the Danube. It is the only Dacian bath mentioned by Ptolemy and on the Tabula; also the translation of Aquae into the Greek Hydata points to a certain importance. The place must be identical with the Aquae Herculis near the mouth of the river Cerna, known as a fashionable bathing establishment of antiquity.

After passing Zarmizegethusa and Ziridava (see route I, 2), the next station is Apulon *Ae*, Apula Tabula. It is the junction with route IV and has a vignette with two towers on the Tabula. The town is a district capital after which one of the three Dacian provinces of Rome is called Apulensis. It is supposed to be the present Karlsburg, Karoly Fejervar in Hungarian.

Salinai *Ae* = Salinis Tabula. A Roman saltern. Point of astronomic observation, Ptol. Vignette with towers, Ptol. (The Athos Atlas has a vignette of the second class only, with 5 battlements). According to C. Müller, I, 447, Salinai was situated at Felvincz which means "saltern" in Hungarian. Here an inscription of the 5th Macedonian legion has been found. Others prefer the localisation near Thorda which also possesses a saltern.

Patruissa = Patavissa Tabula & inscription; more frequently in inscriptions Potaissa. According to C. Müller, I, 446, situated at the present Thorda.

Ulpianon, Garrison-city of the Cohors I Flavia Ulpia that built the road between Patavissa and Napuka in the year 109 A. D., according to a local inscription, cf. C. Müller, I, 446. The Ptol. map places Ulpianon at a considerable distance west of the route. Perhaps this is an error.

Napuka = Napoca Tabula & inscr., designated with two towers on the Tabula. Roman colony according to Ulpianus, "De censibus", I ("Digesta" L, 15, 1, 8), situated ten millia passuum from Patavissa, according to a mile-stone. The present Klausenburg, according to C. Müller.

Porolisson = Porolisso Tabula, Paroliss- and Paraliss- in inscriptions; — the extreme northern station in Roman Dacia south of the Carpathian mountains; designated with two towers on the Tabula; capital of one of the three Dacian provinces, Parolissensis. According to C. Müller, the town was situated at the present Mojgrad where an amphitheatre was built in the year 157 A. D. (inscr. n. 836). Other scholars are of a different opinion. We should prefer to place Porolisson farther north, because it is — together with *Cersie — represented as lying at the northern extremity of a route leading from the Black Sea up the river Dnjestr, according to the Anon. Ravennas (cf. Fig. 17). It might have been situated at the most northerly point of the river Theiss, which is a dominating strategical position a little south-east of the Dukla defile.

Karrodonon *Ae*, Karsidava *Ad* = resp. Cersie and Calidava Tabula, a town in the extreme northern part of route I, 3, north of the Carpathian mountains, belonging to "Sarmatia", i. e. outside Roman Dacia. It seems to be the present Krosno that lies due north of the important Carpathian defile of Dukla through which the route passes from Hungary to the upper Vistula. The form Karrodonon is Celticized, owing to analogy with a well-known station on the mercantile road from the middle Danube to the lower Vistula. Karsidava is the right spelling, which may also have been abbreviated into *Karsion, cf. Cersie on the Tabula. It is the abbreviation which survives in the present Krosno.

5. Route II.

Tab.	.....	Tierua,	Pretorio,	.....	Agnavie,	Sarmategte.
Anon. Ravenn.	.....	Tema,	Pretorich,	.....	Agmonia,	Sarmazege.
<i>Ad</i>	Zeugma,	Dierna,	Frateria,	Arkinna,	Akmonia,	Sarmisegethusa.

The route starts and runs a little east of I, 3. We may supplement its particulars by the aid of the Tabula.

The Ptol. starting point is Zeugma *Ad* = Pons Trajani, a military bridge built by the Emperor near the Kasan defile; but the Tabula rather starts from Dierna *Ad* = Tierua Tabula, Tema Anon. Ravenn., a well-known Roman town at the mouth of the present river Cerna. The Roman town Trans-Tierna seems to survive as the present Cerneti or Tschernetz. Tierna lies directly at the famous Iron Gate of the Danube, a place of high military importance, as shown by the large inscription of the Emperor Trajanus ("Trajanstafel"). Thus it is easily understood that a cartographer should designate it as the starting point of a route.

Arkinna *Ad* = the present Arcan, a station of route II. The Ptol.

map places it almost correctly near the river Rabôn, i. e. the present Jiul. Only it ought to lie south of the following station, not north.

Frateria *Ad* = Pretorio Tabula = the present Fratești, a station of route II, placed almost correctly by Ptolemy, only south of Arkinna, instead of north. The Tabula has distorted the Dacian name into the Latin Pretorio, known from an important garrison city of Dacia. Although the place is nowadays only a village or borough, it seems to have been more important in past times, as the surrounding valley has been named after it: Val Frateștilor. It is also situated near the point where route II joins an important route coming from the present Rimnik on the river Aluta.

Petris Tabula, surviving till our days as Petrilla and Petroșeni, names of two places near the Vulcan defile, where the route leaves Roumania and enters Transylvania. The name is Latin, originating from the surrounding high mountains one of which is still called Petri.

Sarmisegethusa, junction with the routes I, 2 & I, 3. The correspondence Sarmategete is represented as the terminal station on the Tabula.

6. Route III.

Tab. Drubetis,	Amutria,	Polonda (Anon. Ravenn. Potula),	Rusidava.
<i>Ae</i> Drubetis,	Amutrion,	Potulatensioi,	Zusidava.

In the list below, we add some names from the same regions, occurring in *Ad*(?), which seem to have no correspondences with other sources.

The starting point of the route is Drubetis *Ae* and Tabula = Drobeta in the Notitia Dignitatum (5th century). It seems to have been a Roman fortress or bridge-head near the Iron Gate. As it appears still in the Notitia Dignitatum, it may have been held by the Romans even after they had given up the rest of Dacia.

Amutrion *Ae* = Amutria Tabula. The present Motru at the point where the homonymous river debouches into the Ptolemaic Rabôn (C. Müller). The town is also called Gura Motrului. Its position at the river-junction gives it a certain importance.

Netindava *Ad*? = the present Nedeia on a homonymous lake close to the Danube (C. Müller).

Tiason *Ad*? = the present Teascul on the Ptol. river Rabôn, near the Danube. C. Müller writes the name Tiasul, but the above orthography is reported to be more correct.

Sornon *Ad*?. Probably the present Soareni east of Teascul, near the Danube.

Potulatensioi *Ae*, Paloda or Polonda *Ad* = Pelendoua Tabula, Potula Anon. Ravenn. The present Potel on a homonymous lake with

a homonymous outlet into the Danube. Situated close to this river. C. Müller identifies Polonda with the present Palitula (read: Palilula) on the Ptol. river Rabôn, but we have seen above that the Ptol. name is simply a duplicate of Potula.

Romula Tabula, according to an inscription situated at Turnu Magurelli facing the present district of Romaniti near the mouth of the Aluta. Cf. C. Müller, I, 447. The name Romula is Latin and of later origin than the Ptolemaic map which retains an almost purely Dacian nomenclature. We mention it here, because it marks the point where the detailed description of the route ceases.

Sukidava *Ad*, Zusidava *Ae* = Sucidava and Rusidava Tabula, the terminal point of the route in *Ae*. It is the well-known town Sucidava in Moesia inferior, i. e. south of the Danube, at the point where the river suddenly turns from an eastward direction towards the north.

The detailed description of the route really does not extend farther than the river Aluta, whereas Sukidava—Zusidava is only regarded as a far-off terminal point. The constructor of the Ptolemaic map, however, regarded the names from west of the Aluta as representing the entire space down to Sucidava and thus displaced them considerably. At the same time, the order of the names Netindava, Tiason, Sornon seems to have been disturbed, this series being turned the wrong way, east-west instead of west-east. Cf. p. 78 (b).

7. Route IV.

Tab.	Rusidava,	Burridava,	Pretorio,	(S)acidava,	Apula,	(I, 3 >	Cersie	·	△△△△)
<i>Ae</i>	Zusidava,	Piefigoi,	Buridavensioi,	Praitoria Augusta,	Sangidava,	Apulon,	(I, 3 >	△△△△	Karrodonunon)	
<i>Ad</i>	(Zurobara),	Biefoi,	P(u)redavensioi,	.....	Singidava,	.....	(	>	△△△△)
<i>Ad</i>	Sukidava	.....	.....	.....	Angustia,	Zargidava,	Karsidava	△△△△.	

This route seems to have been doubled in *Ad*, its two replicas being transposed respectively from the east to the west. The two fragmentary routes in *Ad* supplement each other so as to give together the sum total of the route in *Ae*; only Sangidava *Ae* is twice repeated in *Ad*.

Sukidava *Ad* = Zusidava *Ae* appears as the starting point of both routes, exactly as Zusidava appears as the terminal point of route III. It must, however, also here be regarded only as a far-off station of correspondence.

The real starting point, according to the Tabula, is Ponte Aluti, which must be placed near the Danube, not far from Romula of route III. It is another Latin name, later than the Ptolemaic stage. We mention it here in order to show that route IV starts from the mouth of the Aluta, not farther east.

Piefigoi *Ae*, tribe south of Buridavensioi = Biefoi *Ad* south of Predavensioi.

Buridavensioi *Ae*, Predavensioi *Ad* = Burridava Tabula, immediately after Ponte Aluti. It may be the present Burdea near a homonymous affluent of the river Vede. Perhaps, the river is named after the town, like Ogost on the opposite side of the Danube, debouching at the town Augustæ. Cf. p. 102.

(Castra Trajana Tabula may be the present Troian or Traian, which lies however south of Burdea, not north.)

Pirum *Ae*, Pinon *Ad*, belonging to the class of early Roman establishments in Dacia. Perhaps the present Pirlita, or the present Pireş. Both of these towns or boroughs are situated north of Bucureşti.

Komidava or Ramidava, no longer traceable.

Praitoria Augusta *Ae*, Angustia *Ad* = Pretorio Tabula. An important Roman garrison city, and consequently distinguished with 5 battlements in the Cod. Athous Vatopediensis. C. Müller, I, 447, places it directly on the Aluta and its affluent Govori, but if our interpretations of Buridava and Castra Trajana are correct, Praitoria would rather be situated a little east of the river. C. Müller regards Angustia as the same place which was with a semi-Greek name called Caput Stenarum (Anon. Ravenn.), as both names would mean "defile". We prefer to identify Angustia with Augusta, as the occurrence of duplicates is so usual in this part of Ptolemy's Dacia.

Cedonie Tabula, after Stenarum, must be amended into *Cebonie (C. Müller). It is the present Cibin or Szeben, in German called Hermannstadt, an important Transylvanian town, situated on a homonymous river.

Sangidava *Ae*, Singidava & Zargidava *Ad* = Acidava & Sagadava Tabula (Sacidapa & Sancidapa Anon. Ravenn.). (S)acidava follows next Cedonie. According to *Ae*, Sangidava would be situated north-east of Praitoria. We may suggest an equation with the present Seges-var or Schässburg, Roum. Sighisora, situated on the river Kokel.

Kaukoensioi, tribe a little south of Sangidava = inhabitants of the Caucalandensis locus which is mentioned by Ammianus Marcellinus XXX, 4. C. Müller suggests that the name may be connected with the river Kokel or Küküllö which passes Seges-var in a south-westerly direction. It has given its name to the town Küküllö-var or Kokelburg, the capital of a homonymous district. The fact that the invading Goths formed a district name Caucaland in their own tongue seems to attribute to the Kaukoensioi a certain importance, and hence it would be likely that their name might still survive.

Patridava *Ae*, Petrodava *Ad*, no longer traceable. (Cf. addition p. 102).

Markodava *Ae*. C. Müller, I, 447, suggests the alteration into *Marodava and interprets the name as "town on the river Marisia". It

might be the present Maros Ujvar. At any rate, the place must be localised in the region of the river Maros.

Apulon *Ad* = Apula Tabula, junction of the routes IV and I, 2.

The routes here dealt with may, in most cases, be regarded as sufficiently verified, partially through the mutual correspondence of the prototypes *Ad* and *Ae*, partially through the supplementary evidence of the Tabula Peutingeriana.

In a number of cases, however, we have commented on names of more questionable provenience, e. g. the town series Netindava, Tiason, Sornon, or the tribal name Kaukoensioi. For practical reasons we thought it most convenient to deal with such matters in connection with the routes passing the immediate neighbourhood.

8. Details from independent Dacian and Jazygian regions.

The Ptol. maps of south-western Sarmatia and of Jazygia contain a series of names which must, to a great extent, have been extracted from descriptions of mercantile roads. As we mentioned above, it is provisionally not possible to distinguish whether they belong to *Ad* or to *Ae* and their connection with the Roman system of roads is equally uncertain.

The tribes Biessoi, Piengitai, Sabokoi, Arsiêtai, Burgiones, Anartofraktoi are placed in a row from the south towards the north close to the frontier of Sarmatia and Germania. As the frontier-line is the disguised expression of the mercantile road from Carnuntum to the Prussian Amber coast (cf. § 23), the tribes concerned probably belong to a description of this route. All of them seem to be Dacian except the Burgiones.

The Biessoi and Sabokoi are by Müllenhoff identified with the "sosibessicobotes" who appear among the enemies of the Romans in the Marcomannian war, according to Julius Capitolinus ch. 22; read: "Osi, Bessi, Saboci". C. Müller connects the Biessi with the Galician town of Biecz, I, p. 426. A still more obvious trace of them is the name of the Bezkydy or Bieskiden, a chain continuing the small Carpathian mountains towards the north. The Dacian element -bokoi re-appears in Koisto-bokoi.

The Arsietai may have some connection with the Ptolemaic town Arsenion east of Bohemia, due south of Kalisia (the present Kalisz in Poland). Cf. § 23, i.

Burgiones = Bur(i) Tabula, the alter-ego of Ptolemy's Lugoi Buroi in Bohemia = Kuriones in interior Germany. It is a well-known east Germanic tribe. The Ptolemaic Burgiones and Buroi stand fairly vis-à-vis and thus mutually confirm each other's position.

The Anartofraktoi evidently are relations of the Anartoi in Roman Dacia.

The tribes Karpianoï, Tagroi, Koistobokoi *transmontanoi may represent a route leading from Karsidava (Karrodunon) down the middle Vistula to Askaukalis where it joins the line from Carnuntum to the Prussian Amber coast. It may be regarded as a continuation of the combined routes I, 3 and IV.

The Karpianoï are a historically well-known tribe, homonymous with the Carpathian mountains. Their place roughly corresponds to that of the mediæval Bielo-Chrobati or Bílí-Charvati, a Slavonian tribe. As the Carpathian mountains were in the Old Norse Saga of Hervör called Harfaða fjöll, it is probable that the "White Charvati" have inherited the name of their Dacian predecessors, or of the homonymous mountain. The Ptolemaic duplicate Harpioi seems to point towards a Gothic form with the same initial letter H that occurs in Old Norse and in Slavonian.

The Tagroi are by C. Müller, I, 431, referred to a Dacian inscription, found near Szent-Miklos in Hungary and containing the word "tagrogêtzigê" ("Tagro-Jazygian"?).

The Koistobokoi *transmontanoi are the Dacians of the extreme north. Müllenhoff, "Deutsche Altertumskunde" II, p. 83, has transplanted them to northern Hungary, and also Wietersheim-Dahn in the "Geschichte der Völkerwanderung" and Bremer in his Ethnography place them south of the Carpathian mountains. This theory is based on a statement of Dio Cassius LIII, 12, who says that the Hastings (Astingoi), after vainly asking for admission into Roman Dacia, were provisionally allowed to leave their wives and children there while their warriors were attacking and conquering the region of the Koistobokoi, according to arrangement with the Roman governor. — It appears from Dio's words that the emigrated Hastings had their head-quarters south of the Carpathian mountains during their undertaking against the Koistobokoi, and we might certainly have accepted Müllenhoff's interpretation if we had not had the map of Ptolemy. But it is absolutely contradicted by this authority, and there is not the slightest reason for rejecting Ptolemy's map of the Dacian regions north of the Carpathian mountains: this section proves one of the very best parts of his work. Consequently, we must interpret Dio's statements quite otherwise than Müllenhoff does. The Hastings, a well-known branch of the Vandals, lived in Silesia. After being refused admission into Roman Dacia, their warriors did not stay south of the Carpathian mountains, but returned to Silesia, in order to attack their immediate neighbours, the Dacians of present Poland. — Our assumption is not only natural in itself, but it is also confirmed by two further circumstances. — 1. The original map, serving as base of the corresponding Ptolemaic section, designated the Polish Koistobokoi as

“transmontani”, i. e. living north of the Carpathian mountains. The affix was intended to distinguish these Koistobokoi from their name-sakes in Roman Dacia (cf. Fig. 17), but Ptolemy or his predecessor misunderstood it, conceiving “Tranomontanoi” as a separate name, exactly as he separated the neighbouring Basternai from the synonymous Peukinoi. — 2. The northward extension of the Dacian nationality appears from the Ptolemaic town Setidava, placed in Germania beyond Kalisia, i. e. north of the present Kalisz in Poland. This town, with the typical Dacian name on -dava, is evidently the outpost of the Koistobokoi transmontanoi towards the north-west, thus proving the extension of their territory to the lower Vistula. Its ethnic significance was already realised in this sense by Zeuss, “Die Deutschen”, p. 263.

The station north of Setidava is Askaukalis which seems to be the present Osielsk near Bromberg where the Vistula suddenly turns from a westly direction due north-east, see the learned research of the Polish author J. v. Sadowski, “Die Handelsstrassen der Griechen und Römer” (1877), p. 58, and map. Askaukalis may be regarded as the junction of two mercantile roads, the one (I, 2) coming from Dacia along the upper Vistula, the other from Bohemia passing Kalisz. Henceforth, the amalgamated routes continue until they reach the amber-producing region in Prussia.

The Jazygian towns Parka and Pession seem to be resp. the present Párkány near Komorn, and the present Pest. Both Ptolemaic towns, it is true, lie at a certain distance from the Danube, whereas the modern correspondences directly touch the river, and the different position of Pession and Pest is by C. Müller regarded as sufficient reason for rejecting the identification. We might have admitted his reasoning as plausible, if it concerned only one equation. But the case of Parka = Párkány is parallel, and if the same geographical objection is raised against both equations, it ceases to be an objection. As both Pession and Parka lie south-east of their modern correspondences, the Ptolemaic localisation seems to betray a common displacement, originating from the Ptol. constructor's wrong interpretation of a local prototype (*Ad?*).

Partiskon, in Jazygia, is situated near the river Theiss which was in ancient times called Pathissus or Parthiscus, according to Pliny and Ammianus Marcellinus.

Finally, we will draw attention to a general fact which may in several cases assist us in tracing the survivals of the ancient nomenclature on Dacian ground.

Numerous Dacian towns or stations are homonymous with rivers or lakes. The same onomastic connection may occur in other parts of

Europe, indeed, but here it seems especially frequent. And it is worth noticing that the invading Slavs were far less inclined to forming "potamic" names of settlements. E. g., the Moesian stations at the mouths of the rivers Isker, Vid, Osem, and Jantra have all lost their "potamic" names which occur on the Tab. Peutung.

In the synopsis below, we shall register the cases concerned occurring on the ancient maps of Dacia.

a. Settlements named after rivers or lakes.

Ptol. Tibiskon, Dierna, Amutrion, Potula- (river & lake), Netindava (lake), Partiskon. Tab. Peutung.: Bersovia, Apo, *Cebonie.

b. River or valley named after settlement (cf. Ogost running through Augustæ in Moesia).

Sar(mati)-Getias, the river of Sarmise-Getusa. Perhaps the present Burdea, passing Buridava. Val Frateștilor near Fratești, the ancient Frateria.

j. Conclusion.

To sum up, we should like to state that the analysis of the Ptolemaic map has shed light on ancient Dacia to an extent which could scarcely have been expected. If we bear in mind how little history tells us of Dacia during the times of the Roman dominion, the result of our cartographic studies may be called comparatively fruitful.

ADDITION. Petrodava alias Patridava seems to be the present Piatra, according to d'Anville, "Mém. de l'Ac." XXVIII, p. 459.

§ 23. LOCAL PROTOTYPES B_1 & B_2 = THE MERCANTILE ROAD FROM THE DANUBE TO THE MOUTH OF THE VISTULA.

a. Summary of Contents.

B_1 & B_2 are itineraries, describing the mercantile road from the middle Danube to the mouth of the Vistula, and containing mountains, rivers, tribes, and towns. The prototypes are duplicates of each other; scattered duplicates occur in *Acde* and *E*. There are Latin marks; B_2 may have been translated into Greek before the stage of Ptolemy. The prototypes were executed after the introduction of a well-established amber trade under the reign of Nero (54—68 A. D.). Affinities with Strabo and Tacitus. Cf. Figures 3, 11, 12, 30, 31.

b. Ptolemaic Localisation.

The Ptol. constructor has localised Prot. *B₁* correctly within the northern region of the collective prototype *A*. We should never have discovered the separate existence of *B₁*, had we not had the alter-ego, Prot. *B₂*.

The latter prototype is displaced in westward direction, partially also towards the south-west. Yet the displacement does not affect the southern and northern limitations of the prototype, i. e. the Danube and the Baltic, and thus the parallel with Prot. *B₁* is quite easy to observe. — Prot. *B₂* has enriched the Ptolemaic map of Germany with duplicates of the rivers Vistula and Oder, here called Svebos and Chalusos. We identify Svebos with the eastern frontier river of the Tacitean Swabia, i. e. the river Vistula. East of the Svebos, Prot. *B₂* places the Sidinoi, exactly as *B₁* places their alter-ego Sudinoi east of the Vistula. Chalusos runs directly north from the region of Kalaigia in *B₂*, and the Oder (Viaduas) runs directly north from the region of Kalisia (now Kalisz) in *B₁*. Probably, Kalisia-Kalaigia was the capital of the Tacitean Helisii (read *Halisii), who would then have lived round the river Chalusos. We regard the name Viaduas as identical with Vistulas, borrowed from another prototype (*F*?). It has certainly nothing to do with the name of the Oder, although geographers now unanimously assume the identification.

A more fatal confusion was caused by another displacement of details from *B₂*, due to the Ptol. constructor. The Markomanoi of *B₂* are on Ptolemy's map placed south of the mountain Sudeta of *B₁*, whereas the "tribe" Sudenoi of *B₂* — in reality = the Sudetes — appears south of the Markomanoi. Modern cartographers, in interpreting Ptolemy's map, erroneously regarded the Markomanoi as the "fixed point", and as this tribe undoubtedly occupied Bohemia, the Sudetes were consequently identified with the mountains north of the latter country. Nowadays the chimera is adopted even in popular nomenclature. The "fixed point", however, is not the Markomanoi, but the Ptolemaic design of mountains, which clearly shows that the Sudetes lie south of Bohemia and are the western Böhmerwald.

c. Definition of Limits.

The area *B₁* & *B₂* coincides with that of Prot. *F* in the Baltic region. As both *B₁* & *F* are correctly localised by the Ptol. constructor, it is difficult to discern their elements, as soon as they do not betray their origin through their occurrence in duplicate series.

B₁ touches Prot. *E* towards the north-east, and Prot. *Ac* (*Ae*?) towards the south-east. There is no confusion, as *B₁* remains within Germanic

territory (apart from Sudinoi = Sidinoi B_2), whereas the latter two prototypes are by the Ptol. constructor limited to Sarmatia and Dacia. The correctness of B_1 sharply contrasts Ptolemy's completely displaced localisation of E .

B_2 on its western side touches the Prototypes Aa , Ab , C , and D . There seems to be no serious confusion. — Ptolemy's wrong localisation of B_2 contrasts his correct localisation of Aa and Ab . On the other hand, the displacement of B_2 contrasts the opposite displacement of C . B_2 has been pushed towards the west, and C towards the east, with the result that the *Buriones and Marvingoi B_2 from eastern Germany collide with the *Chattvaroi C from the mouth of the Rhine. The tribes of D distinguish themselves through the addition of "Sveboi".

d. General Topographic Scheme.

The presence of mountains in B_1 and B_2 appears from the duplicates Asbikurgion—Bikurgion, Sudeta,—Sudenoï. But it may perhaps not be taken for granted that the entire Ptol. design of Bohemian mountains belongs to B_1 . We have assumed a collective oro- and hydrographic map of Germany and Bohemia, viz. A , into which B_1 could be introduced as a supplement.

It is more self-evident that both B_1 and B_2 contained two rivers, viz. the Vistula and the Oder. Their arrangement on the Ptol. map still preserves an obvious parallelism. Prot. B_1 seems to have contained a third river, which starts from the mountain Askiburgion and is supposed to join the Vistula after passing directly west of the town Kalisia. It may be the present Prosna which, after passing directly west of Kalisz, joins the Warta, — not the Vistula. But it may, perhaps, also be an original road-line, misunderstood by the Ptol. constructor.

The entire so-called "Vistula" B_1 between its source and the town Askaukalis is in reality no river, but a road-line, leading from the source of the Vistula to the large turning of this river near Bromberg or Osielsk.

The Ptol. river Vistula, apart from representing in its superior course an original road-line, forms the frontier between the Ptol. sections Germania and Sarmatia from its mouth to its source. The frontier continues farther south without following any physical line on the Ptol. map, till it reaches the Sarmatian mountains; in this interval it would have been correct to make the frontier follow up the Vistula which, as a matter of fact, starts from the said mountain complexe. We may take it for granted that the piece of frontier without physical underlining reflects the continuation of the road-line on the original map B_1 . The existence of an itinerary leading from the Sarmatian mountains to the mouth of the Vistula evidently influenced the Ptol. scheme of map division in a funda-

mental manner: this pronounced line was used as mark of distinction between the sections *Germania* and *Sarmatia*. As a matter of fact, the road fairly coincided with the demarkation of the main nationalities. Only few Gothic tribes were situated east of the road, such as **Buriones* (*Burgiones*), *Basternai*, and *Gythones*, whereas only a single Dacian town appears on its western side, viz. *Setidava*.

The itinerary *B1* was of fundamental importance, not only as a means of distinguishing the sections *Germania* and *Sarmatia*, but also from another point of view: its stations were used by the Ptol. constructor as marks of astronomic orientation. This fact will appear from the following list of correspondences.

	Ptolemaic latitude	Actual latitude
Mouth of the Vistula	56	54,20
	} $1\frac{2}{3}$	} c. $1\frac{1}{3}$
Askaukalis, near Bromberg (<i>Osielsk?</i>)..	54,15	53,11
	} c. $1\frac{1}{2}$	} c. $1\frac{1}{6}$
Kalisia = Kalisz	52,50	51,47
	} $\frac{1}{3}$	} $1\frac{3}{4}$
Mountain Askiburgion, south-eastern extremity, = <i>Jesenik</i>	52,30	50
	} 2	} $\frac{1}{2}$
Sarmatian mountains, northern extremity, = <i>Bieskiden</i>	50,30	49,30
	} 1	} c. $\frac{1}{3}$
Eburo(duno)n = Brno, Brunn	49,30	49,12
	} 1	} c. 1
Sarmatian mountains, southern extremity, near <i>Pressburg</i>	48,30	48,10
	} $1\frac{1}{3}$	} $\frac{1}{4}$
Danube, curve at <i>Kurta</i> , near the present <i>Raab</i>	47	47,45

	Ptolemaic longitude	Actual longitude (from Greenwich)
Mouth of the Vistula	45	18,47—19,20
	} 4	} c. 3
Eburo(duno)n = Brno, Brunn	41	16,38

The Ptol. measurements, it is true, are generally not quite exact, but we could scarcely have expected them to be better in a country like Germania.

It is well-known that Ptolemy describes in the preface how the longitudes and latitudes throughout his work have been calculated by comparing the statements of numerous maps and travellers, — an operation which he calls extremely difficult. If we would take these words literally in interpreting the Ptol. towns in Germania, as numerous previous scholars have done, we should certainly in most cases be mistaken, for the vast majority of the localisations are merely fictitious. But it is different with the area of Prot. *B1*: here we have really a sample of those itineraries which served as foundations of the astronomic calculations in the trustworthy parts of Ptolemy's work. Its position is quite solitary in the middle and northern parts of the Ptol. Europe and may be regarded as a most prominent feature of its literary individuality.

e. Statistical Features.

The Prototypes *B1* & *B2* seem to contain a fairly equal selection of the most usual geographical categories: rivers, mountains, tribes, and towns.

They thus contrast the prototypes *Aa*, *Acde*, and *E*, which seem to have recorded mainly tribes in the neighbouring regions.

A different contrast is represented by *Ab* which contains no tribes.

B1 & *B2* betray no sure traces of the "ethno-topic denomination" which characterizes Prot. *F*, e. g. Venedai with Venedian gulf and mountain, Peukinoi with mountain Peuke, etc.

The comprehensive statistical selection within Prot. *B1* & *B2* corresponds to the importance of the mercantile road to the amber coast. It is moreover emphasized by the fact that the region concerned shows the highest percentage of second class towns in the whole of Germania outside the Roman territory.

The following synopsis illustrates the distribution, as it appears in four of the oldest MS. atlases.

Classification	Ptolemy	Supplementary evidences	Modern continuation	Mediol. Ambr. 527	Urb. 83	Venet. 516	Burney 111	Athous Va-toped.
First class	Eburodunon	in the territory of the mountaneering Celts.	Brünn or Brno, capital of Moravia	1	1	2	1	1
	Eburon	Duplicate name. Astronomic observations		3	2	3	3	2
Second class	Anduaition	.....	.....	2	2	2	3 [?]	2
	Mediolanion	.....	.....	2	2	2	2	3
	Meliiodunon	.....	.....	..	..	2	2	2
	Parienna	.....	.....	2	2	2	2	2
	Karrodonun	in the territory of the mountaneering Celts	.....	2	2 (1 [?])	1	3	3
	*Kaleisia	in the territory of the Helisii (Tacitus) Duplicate: Kalisia	Kalisz, capital of homonymous government	2	2	..	3 [?]	2 [?]
	Susudana	in the territory of the Koi-stobokoi	.....	2	2	3	2	2
Setidaua	Duplicate name	.....	3	2	3	3	2	
Askaukalis	(Duplicate: Astouia Alisos)	.....	..	2	..	2	2	
Third class	Kelamantia	.....	Komorn?	..	2	..	3	3
	Singone	.....	.....	3	3	..	3	3
	Redintuinon	.....	.....	3	3	1 (sic)	3	3
	Nomisterion	.....	.....	3	3	3	3	3
	"Marobudon"	Fictitious town	.....	3	3	..	3	3
	*Arsekvia	Duplicate Arsikva	.....	..	3	..	2	3
	Asanka	.....	.....	..	3	..	3	3
Arsenion	(in the territory of the Ar-sietai?) Duplicate: Aregelia	.....	..	3	..	3	3	

Our survey seems to confirm the statistical scheme of the MS. atlases, so far as it is possible to speak of verification concerning regions which have been almost completely revolutionized during the age of great migrations.

The town of the first class, Eburodunon, till this day is the most important of those which have survived.

Among the towns of the second class, Kalisia is the most remarkable. It seems to be the capital of the Tacitean Helisii, and it survives till this day as Kalisz, the capital of a homonymous government.

5 of the 8 towns among our instances of the second class belong to

eastern Bohemia or the regions south of it, — an area which was already at the beginning of our era well known by the Romans. It is the region near the capital Eburodunon.

The third class, finally, is accompanied by no additional classical evidences and affords no sure modern survivals. Redintuinon, Nomisterion, and Arsenion belong to comparatively remote districts, and Marobudon is fictitious, constructed on the base of a Tacitean passage mentioning the castle of king Marbod. The entire class, consequently, seems to be of inferior importance.

f. Occurrence of Duplicates.

The area of the duplicate series *B₁* & *B₂* covers the provinces of Oesterreich (Rakousko), Moravia, Bohemia, Thuringia (partially), Silesia. Łužica (Lausitz), Posen, eastern Pomerania, and Prussia.

The following names re-appear in other prototypes.

Rakatriai *B₁*, Rakatai *B₂* = Ratakensioi of an interpolated prototype in Dacia (*E*?).

*Kotnoi *B₁*, *Koteinoi *B₂* = Kotensioi (Kontekoi) of the mentioned Dacian prototype.

Buroi *B₁*, *Buriones *B₂* = Burgiones *Acde* (= (Ouis)burgioi?).

g. Linguistic Marks.

Latinisms. Plural on *-i*: Lugi(-dunon) *B₂*. Ablative form *-one*: Singone *B₁*. *ng, nk*: Maruingoi *B₂*, Singone, Asanka *B₁*.

Apart from these, there are some indications which seem to suggest that the two prototypes had been translated into Greek, before the Ptol. constructor combined them with Prot. *A*. They contain some misreadings which are best explained by the assumption of a Greek original.

ΠΟΥΤΙΚΑΙΟΙ *B₁* < *ΠΟΥΤΙΚΑΙΟΙ. (Does this name originate from Prot. *F*?).

ΚΟΓΝΟΙ *B₁* < *ΚΟΤΝΟΙ.

ΒΑΤΕΙΝΟΙ *B₂* < *ΚΟΤΕΙΝΟΙ.

ΚΟΥΠΙΩΝΕΚ *B₂* < *ΒΟΥΠΙΩΝΕΚ.

ΚΑΛΑΙΤΙΑ *B₂* < *ΚΑΛΕΙΤΙΑ.

In all these cases, Latin letters would not so easily cause the same misreadings. Finally, we observe the Greek word for "grove": Limios also, contrasting the Latin words used in the sphere of Prot. *A*.

h. Literary Milieu.

The southern sphere of the prototypes *B1* & *B2* was well known to the Romans, owing to their constant interference with the affairs of the Marcomans and Quades. Cf. the rivers Duria and Marus, mentioned by Pliny IV, c. 81, in the frontier districts of Vannius, king of the Quades. Marus is the present Morava or March from which the district of Moravia draws its name. Duria seems to be the present Thaya, in Čechian called Dyje. Tacitus mentions the river Cusus (now Gusen), "Ann." II, ch. 63.

The Baltic regions were explored considerably later.

Agrippa had some ideas about them, but only vague. He says that Dacia is limited by the Ocean in the north, and by the river Vistula in the west. The dimensions of the country are given thus: CCLXXX milia passum in the longitude, CCCLXXXVI in the latitude.

The extent of the area of Dacia towards the north quoted above agrees with Prot. *B1* & *B2* which place the Dacian town Setidava in the coast region of the Baltic Ocean, and due west of the river Vistula, as an isolated outpost of the Dacians among Germanic surroundings. Cf. the presence of the Dacian Koistobokoi on the opposite side of the Vistula, according to Prot. *Acde*.

Apart from that, Agrippa seems to have had no information about Baltic regions.

The first more detailed observations represented by *B1* & *B2* date from the times of King Marbod's great Swabian Empire, which embraced even the *Sudines (Sibinoi) in Prussia, cf. Strabo VII, p. 291.

The intercourse between Rome and the regions about the mouth of the Vistula was increased under the Emperor Nero, when a regular amber trade was established, cf. Pliny XXXVII, ch. 45.

If we examine the prototypes *B1* & *B2*, we shall find the older stage of Roman topographic knowledge expressed by affinities with Strabo, whereas the later increase of commercial intercourse appears from the numerous affinities with Tacitus.

Affinities with Strabo and Tacitus (VII, p. 290 seq., "Germ." ch. 42 seq.).

Lugoi *B1* (Lugi *B2*) = Luioi Strabo, Lygii Tacitus.

Omanoi *B1* = Atmonoi Strabo, Manimi Tacitus.

*Rugiklloi *B1* with town Rugion = Mugilones Strabo, Rugii Tacitus.

Affinities with Strabo.

Sidones *B1* = Sidones, a branch of the Basternes. VII, p. 306.

Omanoi *B1*, more related with Strabo's Atmonoi *ibid.*, than with the Tacitean Manimi.

Sudinoi *B1*, Sidinoi *B2* = Sibinoi Strabo.

Affinities with Tacitus.

Varistoi *B₁* = Varisti "Germ." ch. 42.

*Kotnoi *B₁*, *Koteinoi *B₂*, with Celtic town-names = Coteni "Germ." ch. 43, with Celtic language ("Gallica lingua").

Ironworks east of Bohemia *B₁* = ironworks of the Coteni, *ibid.*

Mountain Askiburgion, dividing the Lugoi *B₁* = "a continuous mountain chain divides Swabia" ("dirimit scinditque Suebiam continuum montium iugum"), "Germ." ch. 43.

Division of the Lugoi in several tribes *B₁* & *B₂* = "the Lygian nation is the most extended, and divided into several tribes" ("latissime patet Lygiorum nomen, in plures civitates diffusum") *ibid.*

Lugoi Buroi *B₁*, *Buriones *B₂* (south of Askiburgion) = Burgiones *Acde* = Buri "Germ." ch. 43 (evidently south of the "continuum jugum").

Marvingoi (beside *Buriones) *B₂* = Marsigni (beside Buri) *ibid.*

Lugoi Omanoi *B₁* = Lygii Manimi *ibid.* (contrasting Strabo's Atmonoi, who are represented as a branch of the Basternes).

Kalisia *B₁*, Kalaigia *B₂*, near the river Chalusos *B₂*, cf. Helisii "Germ." ch. 43.

"Grove of Limis" = the grove of the Nahanarvali, a Lygian tribe *ibid.*

It might be tempting to add Eluaiones = Helvaeones *ibid.* But as the name seems to re-appear in Prot. *E* as Igylliones, it would rather belong to the duplicate prototype *F*. It is, however, not excluded, that the name Eluaiones occurred both in *B₁* and *F*.

Taking it as a whole, it must be admitted that the affinity between the prototypes *B₁* & *B₂* and Tacitus is striking.

i. Examination of Details.

In spite of partial displacements, the parallel between the two duplicate series *B₁* & *B₂* remains easy to trace. Only in few cases, the order of links is disturbed. See our figure 19, which speaks for itself. It is very fortunate that the duplicate series exist, for several of the doubled names are preserved nowhere else, be it in modern topography or in the ancient.

We shall now regard the single names, comparing them with the evidences of mediæval and modern geography.

1. Rakatriai *B₁*, Rakatai *B₂* = Ratakensioi on the Ptol. map of Dacia beside Kotensioi, cf. *Kotenoï, neighbours of the Rakatriai. Rakousko is the Čechian name of Austria, borrowed from the province of Nieder Oesterreich. A mediæval castle of that province, called Rakoutz, is

supposed to be the present Raabs. Cf. Šafarik, "Slavische Altertümer" I, 50 seq., Müllenhoff, "Deutsche Altertumskunde", II, 331.

2. Singone *B₁* is the Latin ablative form of a name that seems to be Dacian, cf. Singidava in Dacia, and the Daco-Celtic town Singidunon in Moesia. The Latin flexion betrays that the station was well known by the merchants.

3. Eburon *B₁*, Eburodunon *B₂*, corresponds to Brno or Brünn, the capital of Moravia. The Ptol. distance of Eburon from the Danube, like that of Brünn, is exactly one degree of longitude. Eburodunon belongs to the points of astronomic observation recorded by Ptolemy in Book VIII, VI, 3, and is consequently decorated with towers on the map, but the resulting localisation is too near the Danube for Brünn; the surrounding names from *B₂*, such as Baimoi and Arsikva, show the same dislocation towards the south. The present forms Brno and Brünn, with loss of initial *E*, may remount to the Celtic accentuation which also appears in the French forms of the same name: Embrun in south-eastern France, and Iverdon in Switzerland (Germ. Iferten), both with the stress on the last syllable.

4. *Arsekvia *B₁*, Arsikva *B₂*, is probably a town of the Dacian tribe of Arsietai, placed by Ptolemy in the directly contiguous part of Sarmatia. The place Arsenion *B₁* in the neighbourhood = Ar(e)gelia, Aregeouia *B₂*, also seems to belong to them.

5. Sudêta orê *B₁*, "tribe" Sudênoi *B₂*, = the western Böhmerwald. The Sudêta orê are placed south of the Bainochaimai = Bohemians, and the Sudênoi south of the Markomanoi, also = Bohemians.

6. Bainochaimai *B₁*, Baimoi *B₂*, = Bohemians. The vocalisation *ai* in *Baio- is a sign of enlarged local experience, as the preceding classical authors write constantly *oe* or *oi*, owing to the connection with the well known Celtic tribe of Boji.

7. Varistoi *B₁*. The well known tribe of Varisti, later occupying the "pagus Varascus" in Burgundy, according to its own national traditions originated from the district of Stadewanga near the river Regen, i. e. near the present Regensburg. See Egilbert's "Vita S. Ermenfredi", Acta Sanctorum Vol. VII, Sept. 25. The localisation agrees with the Ptolemaic.

8. *Kotenoi *B₁*, *Koteinoi *B₂* = the Kotensioi (Kontekoi), erroneously placed on the Ptol. map of Dacia (from *E*?). It is a well-known tribe of mountaneering Celts in Bohemia (Tacitus). The ironworks (siderorychia) on the Ptolemaic map are placed in their neighbourhood. According to Strabo, the silver mines of Sisapon in Spain were called "Kotinaï". As the Celts were the pioneers of mountaneering in most parts of Europe, "kotinaï" seems to be the Celtic word for "mines", and Kotenoi would be "miners". In Čechian, kutati is "to mine, to dig",

kutny = "mining", and an important mining centre in the region of the Kotenoi is called Kutna hora, Germ. Kuttenberg. The Slavs certainly learned the mining technique from the Kotenoi, and so probably also adopted its Celtic terms. Consequently, the name Kutna hora may more or less directly remind the Celtic tribe of Kotenoi.

9. Sidones *B1*, known from Strabo as a branch of the Basternai. On the Ptol. map of Sarmatia, the Basternai are placed fairly vis-à-vis.

10. Lugoi Buroi *B1*, *Buriones *B2* = Burgiones *Acde*, placed in Sarmatia fairly opposite the Buroi. The Buri are well-known from Tacitus and other classical authors.

11. Marvingoi beside *Buriones *B2* = Marsigni beside Buri, Tacitus. The Marvingoi may have some connection with Maurunga, a mediæval name of the regions east of the Elbe, = the epical Mornaland in the Old Norse poem of Oddrúnargrátr (land of the With-Myrgingas in Widsith?). The mediæval name, later assigned to the Slavs, was in the "Chronicon imperatorum et pontificum bavaricum", MG. SS. XXIV, 222, changed into Mauritani. The linguistic connection with Marvingoi is not normal, but accidental coincidence is on the other hand also unlikely.

12. Korkontoi *B1*, are the inhabitants of the Krkonosč, or Riesengebirge. Cf. Šafarik, "Slav. Altert." I, p. 486. Müllenhoff, "Deutsche Altertumskunde" II, p. 373, rejects the equation, because it does not satisfy the strict laws of phonetic correspondence. His objection, however, is not justified, as important local names are often subjected to arbitrary transformations, owing to popular fancy etc.

13. Mountain Askiburgion (in numerous MS. atlases, e. g. Urb. 82: Asbikurgion) *B1*, "town" Bikurgion *B2*. This chain is generally identified with the present Jeseník (Germ. Gesenke), as both names signify "Ash-mountain". Perhaps, Askiburgion might also be reflected by the present Ještěd or Jeschken in northern Bohemia. The position would agree well with the north-western extremity of the Askiburgion. It is not excluded that the original name might have been developed or translated differently in the local dialects.

14. Teuriochaimai *B1* (Turonoi *B2*?). The so-called tribal name is derived from the name of a district which may signify the "Home of Thuringians".

15. Arsenion *B1*, Argelia, Aregelia, Aregouia *B2*, on the northern frontier of Bohemia, according to *B1*. Probably a frontier town of the Arsietai in independent Dacia, cf. under 4.

16. Kalisia *B1*, Kalaigia *B2*; in *B1* directly east of the river (?) corresponding to the present Prosna; in *B2* south of the river Chalusos. Probably the capital of the Tacitean tribe Helisii, the epical Hælsingas who are mentioned in the poem of Widsith. It is the present Kalisz,

the capital of a homonymous government. The present K of the name may remount to Dacian pronunciation. Ptolemy places Kalisia on 52,50 of latitude, whereas the actual position of Kalisz is 51,47. The Ptol. distance from the mouth of the Vistula is 3,10, whereas the real is about 2¹/₂. In both cases, the difference is of little import. The Polish scholar J. v. Sadowski points out that Kalisz occupies a position on the most convenient route leading to the ford near Kōnin between the moors of the Warta, s. "Die Handelsstrassen der Griechen und Rōmer durch das Flussgebiet der Oder, Weichsel", p. 57.

17. Lugoi (Dunoi) *B₁*, Lugi(-dunon) *B₂*. Inhabitants of the present Łużica or Lausitz, a well-known eastern Germanic tribe.

18. (Lugoi) Dunoi *B₁*, (Lugi-) -Dunon *B₂*. Inhabitants of the epical Dun-heiði, or "Dun-heath", mentioned in the Old Norse poem "Battle of Huns" (Hervararsaga) on the frontier against Hunland, i. e. Hungary.

19. Siliggai *B₂*. The present Silesians, Pol. Slezani. The Slavonic form is developed normally from a Gothonic Siling, exactly as Slav. knez < kuning, "king". As a branch of the Vandals, the Silingians played a great role during the migration age.

20. Limios alsos, "grove of Limis", *B₂*. Probably identical with the sacred grove of the Lygian tribe of Nahanarvali, mentioned by Tacitus. Cf. C. Müller I, p. 270.

21. Lugoi Omanoi *B₁*. The Lygii Manimi of Tacitus; the Atmonoi of Strabo, represented by him as branch of the Basternes.

22. Setidava *B₁*, Susudana *B₂* (Cod. Vatic. 191). A town with the well-known Dacian element -dava. Its presence in these northern regions of Germany, not far from the mouth of the Vistula, is supported by the Ptolemaic localisation of the Koistobokoi *transmontanoi, who are placed on the opposite side of the Vistula. These northern Koistobokoi were a great independent Dacian tribe: they fought against Rome in the Marcomannian war (Julius Capitolinus ch. XXII), ravaged Greece (Pausanias IX, 34), were defeated by the Vandalian tribe of Hasdings, but revenged by the Dankriganes (Dio Cassius, LXXI, 12).

23. Askaukalis *B₁*, probably = Astouia & Alisos *B₂*, perhaps "the town Astouia of the tribe called *Halisiï", cf. the name Sarmize—Getusa, signifying the mixture of two nationalities. The town concerned is the last station on the route and must consequently have occupied an important position. The German scholar Voigt has proposed to identify it with the present Osielsk near Bromberg, and Sadowski accepts this suggestion as strikingly convincing. As the Ptol. spelling of Askaukalis is all but certain, nothing prevents us from assuming that it might be continued in the form of Osielsk. Still more decisive is the topographical argument: Osielsk lies exactly at the point where the Vistula, after its large curve through Poland, suddenly turns from sharp west-

ward direction towards the north-east. Here the mercantile road from the Danube, after leaving the Vistula in upper Silesia, again joins the river in order to follow it to its mouth; such place certainly demands a station. The distance of Askaukalis from Kalisia is about $1\frac{1}{2}$ degree of latitude, whereas the distance of Osielsk from Kalisz is about $1\frac{1}{4}$. Thus the Ptol. localisation seems well verified also from the astronomic point of view.

24. *Rugiklioï with town Rugion at the Baltic coast = the well-known Gothic tribe of Rugi, the epical (H)ulme-Rugi of Jordānis, the Holm-Ryge of Widsith. It is only not necessary that the names mentioned belonged to Prot. *Br*; they might also have belonged to Prot. *F*. The Rugi are mentioned by Tacitus as the most northern of the tribes in eastern Germany, a fact that makes us inclined to refer them to *Br*, owing to the close affinity between this prototype and Tacitus.

25. Vistulas *Br*, Suebos *B2*. The river Vistula, the eastern frontier of the Swabians, according to the Strabonian and Tacitean description.

26. Sudinoi *Br*, Sidinoi *B2*. The mediæval Sudovitæ, a Prussian tribe, inhabiting the present district of Sudauen.

27. Galindai *Br* (or Prot. *F?*). The mediæval Galinditæ, another Prussian tribe.

j. Conclusion.

As result of our comparison, the topography of *Br* and *B2* may be called well verified.

These twin prototypes, like *Ad* & *Ae*, supply a valuable piece of topography and ethnography from a region, which lost most part of its ancient population and nomenclature during the age of migration. Their evidences enable us to trace exactly the localisations of different nationalities along the route of Roman amber trade from the Danube to the Baltic, viz. Pannonians, Celts, Dacians, Gothons, and Lithuanians. In § 22, we have pointed out the importance of the town Setidava *Br* = Susudana *B2*, as an outpost of Dacian nationality in northern regions which are as a rule wrongly attributed to the Gothons.

ADDITION. R. Much, "Die Städte in der Germania des Ptolemäus" ("Zeitschrift für deutsches Altertum" XLI, 97. 1897) already sets forth a long series of those critical observations which we have made above concerning the Ptol. misreadings and wrong localisations. In other points, his assumptions would lead to different results. Astouia, var. Aistouia, is interpreted as a Latin "aestiva sc. castra", cf. Velleius II, 117: "mediam ingressus Germaniam . . . trahebat aestiva". Alisos, Lakiburgion, Budorgis-Budorigon are identified with the Rhenish towns Alison, Askiburgion, Budoris, and Susudana-Setidava with Zusidava in Dacia. If the suggestions concerning the first-mentioned five towns be correct, it would

imply the assumption of at least one additional prototype. We do not think that the existence of a Dacian town *Setidava* in eastern Germania need be rejected, as the *Ptol. Koistobokoi* *transmontanoi prove the presence of Dacians in Poland (cf. p. 113, 22). Our main results concerning the prototypes *B1* & *B2* do not seem to be affected by Much's divergent statements.

§ 24. LOCAL PROTOTYPE C = WESTERN GAUL, BELGIUM, AND NORTH-WESTERN GERMANIA.

a. Summary of Contents.

Prot. *C* is an itinerary, describing north-western Gaul, Belgium and a part of north-western Germany, containing rivers, tribes and towns. Duplicates occur in *Aa*. The prototype has Latin marks, but was perhaps translated into Greek before the stage of Ptolemy. There is close affinity with the *Itinerarium Antonini* and the *Tabula Peutingeriana*.

Cf. Figures 1, 21, 22, 23.

b. Ptolemaic Localisation.

The *Ptol.* constructor has introduced Prot. *C* into the corresponding parts of Prot. *A* in such a manner that *C* is absorbed without leaving directly visible traces, so far as physical outlines are concerned. Yet the presence of *C* is apparent from the eastward displacement of the accompanying names, especially the duplicates. Most of the towns concerned have been noticed by C. Müller.

At the outset, it is not obvious whether all of the displacements must be regarded as betraying Prot. *C*, or whether some of the names concerned might be derived from other sources. Provisionally leaving this question undecided, we shall register any cases of displacement observed by us in Gaul, Belgium, and north-western Germany.

We begin with western Gaul.

Redones, the people of the present town Rennes, form the starting point of the displacement, being removed from the region of the lower Loire to the middle course of that river. In Prot. *A*, the *Ptol.* constructor must have found both the Redones and their town *Kondate* missing, but he found a name-sake of the latter on the middle Loire, — both towns are recorded by the *Tabula Peutingeriana* —, and consequently he pushed the Redones thither. Once begun, the displacement continued, as we shall see by regarding the position of their neighbours.

Namnetai, the people of Nantes, emigrate from the mouth of the Loire to the mouth of the Seine; their town *Kondeouinkon*, now Nantes,

being likewise removed. Their correct place is still marked by their mutilated alter-ego Samnitai, originating from Prot. *A*.

Abrinkatuoi, the people of Avranches, from western Normandy to the mouth of the Seine, with their town Ingena, now Avranches.

Ratomagos, now Rouen, from the Seine towards the east. The duplicate of this town, originating from Prot. *A*, is in return pushed a little west of the river.

A third duplicate, betraying possibly the contrast between Prot. *C* and *A*, is roMorinoi = Morinoi, in the present Flanders. Accidentally, no displacement has occurred here worth mentioning.

We now enter the Belgian district called Germania, mentioned e. g. in the Itin. Antonini. The Ptol. constructor has mistaken this whole district for the Germania megale of his Prot. *A*, i. e. the present Germany.

The western frontier of the Belgian Germania is mistaken for the Rhine *A* which forms the western frontier of Germania megale. The middle course of the actual Rhine in return is mistaken for the Abnoba of Prot. *A* (*A*).

In "The Scottish Geographical Magazine", vol. XXX, p. 70, we have suggested that the continuation of the Rhine is concealed by the mountain Melibokos and the river Weser in *A*. Further considerations have caused us to withdraw this suggestion.

The mountain Melibokos seems to lead us too far south of Askalington, which marks the place of the Rhenish town Askiburgion or Asberg. And Leufana = Levefano Tab. Peut., lies at a considerable distance east of the Weser, whereas it ought to lie on the western border, if this river were to be regarded as the original Rhine of *C*. As a matter of fact, the Ptolemaic map of Germany seems to contain no physical line which could have been identified with the lower Rhine of *C*. It is perhaps not excluded that Prot. *Aa* contained a line representing the frontier of the Roman territory in northern Germany between the years 9 A. D. and 47 A. D. Such a line might have crossed the Weser and touched the Elbe exactly at the places where the Ptolemaic map puts the names Askalington and Leufana. And the Ptol. constructor would have identified the lower Rhine *C* with this frontier line of Prot. *Aa*, whereas the final edition of the atlas eliminated the frontier line, because the Romans had in 47 A. D. given up their dominion over the North German coast.

If the reasons of this displacement on German ground remain somewhat obscure from the physical point of view, its presence is no less certain, as the reader will notice from the following lists of correspondences:

Tab. Peuting.

1	2	3	4	5	6	7	8	9	10	11
Aspingium	Tab[u]lis	Flenio	Foro Adriani	River Anatus	Matilone	Albanianis	Leufano	Caruone	Asciburgio	Nouesio.

Prot. C.

1	2	3	5	4	7	6	8	9	10	11
Askiburgion	Nabalia	Fleum	F. Abiranon	River Amisias	Marionis	Albis(*amnis)	Leufana	Koinoenon	Askalingion	Nouaision.

Itin. Antonini.

1	2	3
Theudurum	Mediolano	Bagacum.

Prot. C.

2	1	3
Teuderion	Mediolanion	Bogadion.

We learn from these lists that the Ptolemaic names of towns and rivers in north-western Germany re-appear often as Belgian on the Tabula Peutingeriana or in the Itinerarium Antonini, either with almost identical forms, or under a slight disguise.

The following easily identified towns are localised by the Ptol. constructor without any traceable assonances on German ground; most of the equations have been suggested by C. Müller: Leufana, Levefano Tab. Peuting., according to C. Müller the present Levenstein; Askalingion, Asciburgio Tab. Peuting., the present Asberg on the Rhine; Nouaision, Novesio Tab. Peuting. and Itin., the present Neuss on the Rhine; Teuderion, Theudurum Itin., the present Tüddern between the Meuse and the Rhine; Mediolanion, Mediolano Itin., perhaps the present Moyland near Asberg; Bogadion, Bacaco Tab. Peuting., Bagacum Itin., the present Bavay on the Sambre¹⁾; we may add Tekelia, mentioned by no other classical evidences = the present island of Texel.

In the following cases, Belgian names of Prot. C have been absorbed by correctly localised German names of Prot. Aa, owing to treacherous assonances. Although incomplete, the assonances are sufficiently "self-evident" in order to deceive a Ptol. constructor, after all we know about his philological capacity. As a matter of fact the order of names on the Tab. Peuting. corresponds so well to the assonances on the Ptolemaic map that we cannot wonder he was mistaken. Caspingium — perhaps written with indistinct initial — became Askiburgion, now Asberg on the Rhine; Tabulis, *Nabulis > Nabalia on a homonymous river, mentioned by Tacitus near the Zuider Sea; Flenio > Fleum, on the Vlie Strom;

¹⁾ Müller suggests an identification with Burginatum of the Tab. Peuting. and Itin. Ant., but the assonance seems too feeble.

*F. Adrianum, Fabiranon > Fabaria, a Roman name of the island Bor-kum; river Anatius > river Amisias, now Ems; Albanianis, the present Alfen, near Leyden, misunderstood as *Albis amnis > Albis, the Elbe. We may add Orolaunum, the present Arlon (Flemish Aarlen), west of Luxemburg, misread by the Ptol. constructor as Ar-taunon, and localised near the mountain Taunus.

After the towns and rivers, we shall consider some tribes from the district Germania west of the Rhine, transplanted by the Ptol. constructor to Germany.

The Tenkeroi of Prot. *Aa* seem to have absorbed the *Tungri of *C* = Tongri of Itin. Antonini. Inkriones, between Rhine and Abnoba, look enigmatic. In "The Scott. Geogr. Mag.", vol. XXX, p. 70, we have suggested an equation with the Belgo-German tribe Eburones, as the termination -ones is very rare among the tribes of Belgium (other instances: Ceutrones, Olibriones)¹). Intouergoi, south of the Inkriones, are another tribe with an extraordinary kind of name. In our above-mentioned research, we have identified them with Strabo's Trevagroï = Treveri, the inhabitants of Trier. But an examination of the Tab. Peut. supplies a more plausible equation: Intouergoi = Nitiobroges. The latter name is corrupted by the author of the Tab. Peut. owing to erroneous identification with the well-known Nitiobriges near the Garonne. The second element -obriges Tab. Peut. seems to be derived from Obringa, the Ptolemaic name of the river Mosel, and the (Niti)obriges thus would be connected with the Ol-ibriones of Jordanis XXXVI. and the Al-obrites or Al-obroges of the Anon. Ravennas, IV, 24 and 26, cf. Zeuss, p. 578, 579. The first syllable int = nit would have been more correctly spelt by Ptolemy, and the spelling verg. instead of brig may represent the vulgar Latin pronunciation, cf. Borvetomagus, *Vorbetomagus instead of Borbetomagus, now Worms.

Vargiones south of Intouergoi are, of course, the well-known German tribe Vangiones, correctly localised west of the Rhine on Ptolemy's map of Gaul. Perhaps they are concealed by the badly corrupted name "Rer-viges" beside Nitiobroges on the Tab. Peut.

Karitnoi south of the Vargiones = Parisi Tab. Peut., erroneously identified with the well-known inhabitants of Paris. They are mentioned by Cæsar as Caeresi, by Tacitus as Caeracates, and lived in the mediæval district Pagus Caroascus north-west of the Mosel. The derivation has evidently been somewhat fluctuating.

All the tribes mentioned indubitably belong to Prot. *C*. Continuing

¹ The reading Nikriones of one MS. (*A*) has by some scholars been combined with the Nicretes of a Roman inscription, but it is too isolated.

farther east, we enter that region which we have in our provisional sketch assigned to *D*.

The tribes concerned belong to the country east of the Rhine. Kamaui and Chairusikoi, near Leufana, at the utmost edge of the area with eastward displacement, correspond to the Chamavi and Chreptini on the Tab. Peuting., not far from Leufano, at the utmost north-western edge of Germania. The displacement of the Kamaui is very strong: from the Rhine to the Elbe. The neighbouring tribes Chattai and Tumbantoi have equally been transplanted from the Rhenish districts to interior Germany. Kalukones = Kathylkoi Strabo: *Kauklones, or smaller Chauks, occupy both sides of the Elbe, according to Ptolemy's text, although they ought to stand in reality west of the Weser, as their alter-ego does in Prot. *Aa*.

The presence of a tribe *Angrivarii in *C* may be conjectured from the absurdly displaced Ptolemaic Sueboi Aggeiloi belonging to Prot. *D*. It is scarcely conceivable how it could occur to the Ptol. constructor's mind to place the Angles in interior Germany, if he had not been misled by some assonance. The form Angrivarii may have been abbreviated into Angrī, so that only the two first syllables were legible. It is not excluded that the corrupted forms "Vapi. varii" on the Tab. Peuting. might conceal the name of the same tribe. The Brukteroi may also have occurred in *C*, corresponding to the Burcturi on the Tab. Peuting. If so, the "smaller Brukteroi" near the Rhine were really meant, whereas the Ptol. constructor identified them with the "greater Brukteroi" of Prot. *Aa* farther east.

Next to the Brukteroi, we notice the Kasvaroi and the *Chattvaroi (Chaitvoroi), two tribes that ought to stand near the lower Rhine. ("Haci. Vapi. Varii" on the Tab. Peuting.??). The Ptol. constructor has transplanted them east of the Abnoba; the *Chattvaroi were probably assimilated with the Raetovarii, a Danubian tribe in the present district of Ries, mentioned in the "Notitia Dignitatum".

Finally, the Uispoi follow, = Usipi. This is the only one of the displaced tribes that has retained its position near the Rhine. In return it has been pushed far south from the region north of Mayence to the slopes of the Schwarzwald.

c. Definition of Limits.

We may expect that the definition of limits will here cause some difficulties, because *C* is neither accompanied by a duplicate prototype nor limited by distinct natural or political boundaries. As a matter of fact, we have altered our views considerably, since we published our first

Ptolemaic eassay in the "Saga Book of the Viking Society", vol. VIII (1913), and in "The Scottish Geographical Magazine", vol. XXX (1914).

One question concerns the distinction of prototypes in Gaul.

As the reader will notice from our Fig. 21, the Ptolemaic displacement affects two sections which are distinctly separated from each other. The one represents a region in western Gaul, which is transplanted to the borders of the river Seine. The other is the Belgian district Germania which is transplanted east of the Rhine, whereas the adjoining parts of Germany are pushed farther east.

Owing to the complete separation of the two displaced sections, it might seem questionable whether they originate from a single prototype or from two. As the displacement is so constantly eastward, however, the assumption of a single prototype seems most likely. Moreover, a correct map shows no chasm between the sections concerned, as the reader will notice by regarding our Fig. 23.

In § 24, we shall supply further material showing that the Ptol. constructor sometimes indubitably split up contiguous sections of his original maps.

Some questions of little importance concern the relations of the prototypes *C*, *Aa*, and *Ab*. In "The Scott. Geogr. Mag.", vol. XXX, p. 70, we have suggested the equation *Amisia C* = *Alison Aa*. In the same volume, p. 621, we have withdrawn this suggestion. Ptolemy's town *Amisia* near the homonymous river actually existed and still exists as *Ems* on a homonymous river in *Hessen-Nassau*; it belongs to Prot. *Ab*. The fortress of *Luppia*, assigned by us to Prot. *C*, *ibid.* p. 70, may possibly also belong to *Ab*.

A more important alteration of our views affects the demarcation of Prot. *C* against Prot. *D*. On the Ptolemaic map, Prot. *C* is most obviously betrayed by its constant eastward displacement. The same displacement characterised parts of our assumed Prot. *D*, whereas others, such as the "Swabian" tribes of *Angles* and *Langobards*, are displaced in exactly the opposite direction.

The parallel displacement would of course make the distinction of the two prototypes difficult, but we believed that we had found firm ground in the duplicate *Chaimai* = *Kamaui*. As the tribe *Chaimai* stands among Belgian towns evidently belonging to *C*, we assigned it to this prototype. Consequently, its alter-ego *Kamaui* would belong to *D*, and this prototype would hence lay claim to the entire surrounding milieu of tribes: *Chairusikoi*, *Chattai*, *Tubantoi*, etc.

Having divided the prototypes in this way, we further searched for physical lines which might conceal the original framework of *C* and *D*.

And we suggested that the Ptolemaic mountain Melibokos might be regarded as representing the original Rhine of both prototypes, only in the opposite direction: in *C*, east-west must be reconstructed as north-south, whereas in *D* it would be south-north. See figures 6 and 7 in the first article, vol. XXX, p. 57.

The above theory of division would be certain, if it could be taken for granted that the Ptolemaic Chaimai belonged to Prot. *C*. Later, however, we noticed that their pertinence to *C* is less certain than we had thought at first: in spite of their eastward displacement, they might also belong to Prot. *Aa*. The Ptolemaic North-Sea tribes derived from Prot. *Aa* may not necessarily all be correctly localised. As a matter of fact, Ptolemy places the Frisians too far south, practically at the place of the Chamavi, and so it is possible that they have displaced the latter towards the east, no matter whether this displacement occurred already in the Prototype *Aa*, or whether it was due to the Ptol. constructor.

As soon as we assign the Chaimai to Prot. *Aa*, nothing prevents us from regarding Prot. *C* as owner of the duplicate Kamaui, and of the entire surrounding milieu. Prot. *D*, on the other hand, would lose most of its contents, being reduced to the trinity of Swabians, i. e. Semnonnes, Aggeiloi, Laggobardoi.

Considering the two alternatives, we feel obliged to decide in favour of Prot. *C*, declaring this prototype owner of almost all the displaced Ptolemaic tribes between the Rhine and the Elbe, except the Swabians. Our principal reason is the fact that the correspondence with the Tabula Peutingeriana will only become complete, if we may attribute to *C* the Kamaui-Chairusikoi = the Chamavi-Chrepstini Tab. Peuting.

d. Topographic Correctness.

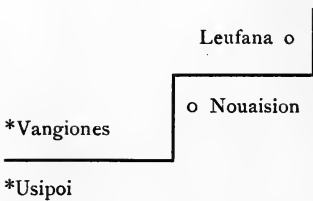
As we shall see under the heading "Literary milieu", Prot. *C* was a so-called itinerary, i. e. a road-map showing the distances between a series of towns. Such maps, like our modern schematic representations of railway systems, do not pretend to offer a correct topography. The Tab. Peuting. is a classical example of the prevailing distortions. Correspondingly, there are several traces of bad topography in Prot. *C*.

The tribes are distributed in a confused manner, as in the Tab. Peuting. (1) Abrinkatuoi, (3) Namnetai, (2) Redones, instead of 1, 2, 3; Karitnoi south of Vangiones, *Chattvaroi south of Kasvaroi, Kamaui beside Chairusikoi and Chattai, cf. the Chamavi beside the Chrepstini on the Tab. Peuting. The distance between Nouaision and Bogadion (Bagacum) is shortened. On the other hand, the distance between Mediolanion and

Leufana is largely exaggerated. *Bagacum ought to lie south-west of Nouaision, not north-west.

It must, however, be remembered that the Ptol. constructor may have deteriorated the map, as he seems to have done by introducing the broad chasm between the sections north-western Gaul and Germania Belgica.

In spite of the confusion, parts of the map seem to have been not so bad after all. The line *Vangiones, *Arlaunon, *Tungri (Tenkeroi), Nouaision, Teuderion corresponds fairly well to the actual positions of Worms (capital of the Vangiones), Arlon, Tongern, Neuss, Tüddern. It seems that Prot. *C* had not yet assumed the extremely oblong shape which deforms the Tab. Peuting. The Rhine was probably represented on the basis of observation of its various curves, and not as a smooth line, as was the case on the Tab. Peuting. and in Prot. *A*. A zigzag line is implied by the localisations of the fixed points indicated in the accompanying diagram. It corresponds to two actual curves of the river, the one between Strassburg and Bingen, the other between Neuss and Nimwegen.



e. Statistical Features.

Prot. *C*, like the Tab. Peuting., contains mainly towns, but also several tribes. In the invaded north-western German section of Prot. *Aa*, Prot. *C* thus "supplies a want", as these regions were in reality almost completely bare of towns.

On the other hand, Prot. *C* enriches south-western Germany with a series of tribal names, whereas the due local prototype *Ab* contains no samples of this category. The present selection of names in Prot. *C* seems somewhat accidental or arbitrary, but this fact may to a great extent be due to the Ptol. constructor. It is worth noticing that all traceable towns of Prot. *C* in the western section possess a certain importance, three being tribal capitals, and the fourth a flourishing mercantile centre, the present Rouen. On the Tab. Peuting. two of these are distinguished by towers, viz. Rouen and Rennes.

As to the names of tribes, the selection may have been somewhat arbitrary from the very beginning. We shall see later on that it is reproduced almost unaltered by the Tab. Peuting. But Prot. *C* at least in some points is more complete than both the Tab. Peuting. and the Itinerarium Antonini. The *Vangiones, Abrinkatuoi, Redones, Morinoi of *C* are missed in both of the latter documents. And, if we are right in assigning to *C* the Kamaui and their surroundings, the prototype

would have contained a fairly copious representation of tribes in western Germany, whereas the selection of the Tab. Peuting. is more fragmentary, and no German tribes occur in the parts concerned of the Itin. Anton.

f. Occurrence of Duplicates.

The distribution of duplicates has been somewhat altered, owing to the modification of our theory. We now assume the following series: Namnetai *C* = Samnitai *A*, Ratomagos *C* and *A*, roMorinoi *C* = Morinoi *A* (not in all MS. atlases), Vargiones *C* = Vaggiones *A*, Askalingion *C* = Askiburgion *A*, Kamaui *C* = Chimai *A*. The two Marionis can no longer be regarded as authentic duplicates, as the one belonging to *C* is rather a distortion of Matilone on the Tab. Peuting. We have withdrawn the identification of Intouergoi *C* and Triberoi *A* (Trevagroï Strabo), preferring the combination with the Nitiobrogos of the Tab. Peuting. Also the equation Feugaron *C* = Tungroi *A* seems too questionable.

g. Linguistic Marks.

In "The Scottish Geographical Magazine", vol. XXX, p. 71, we pointed out Latin residuals in Prot. *C*, such as the *nk*, *ng* in *Kondeouinkon*, *Ingena*, *Abrinkatuoi*, *Askalingion*. It may be added that *Leufana* points towards the vulgar Latin form *Leufano*, Tab. Peuting.; a Greek MS. would scarcely have dropped the final nasal as early as the second century A. D. Our new conjecture *Albanianis*, Tab. Peuting. = **Albis amnis*, Prot. *C*, suggests that the prototype would have been read and interpreted in Latin. Also the equation *F-abiranon* = *Foro Adriani*, Tab. Peuting., seems to point towards Latin types.

A pre-Ptolemaic trace of Greek editorial language is perhaps the erroneous spelling *XAI TOY QPOI* < *XATTOY APOI*; the Latin correspondence *AE* = Greek *AI* would not so easily be derived from *TT*. The *ω* in *Vargiōnes*, *Inkriōnes* may equally originate from a Greek preliminary stage; otherwise, Ptolemy constantly writes *-ōnes* in Gallic and Belgian names, except in *Keutrōnes* that is placed within Italian territory.

h. Literary Milieu.

Prot. *C* is most closely related with the Tab. Peuting., but has also special affinities with the Itin. Anton.

1. Common Affinities.

Towns: *Kondate*, *Ratomagos*, **Bagakon*, *Koinoenon* (*Garuone*), *Nouaision*.

2. Affinities with the *Tabula Peutingeriana*.
 Tribes: Namnetai, Intouergoi, Vargiones??, Karitnoi, Brukteroi?,
 Kamauoi, Chairusikoi (Kasvaroi?).
 River: Amisias (for Anatus).
 Towns: Askiburgion (for cAspingium), Nabalia, Fleum, F-abiranon,
 Matilone, Albis, Leufana, Askalngion.
3. Affinities with the *Itinerarium Antonini*.
 Tribal district: Germania. Tribe: *Tenkeroi (= Tongri).
 Towns: Mediolanion, Teuderion, *Arlaunon.

The correspondence regarding the names Leufana, *Arlaunon, Teuderion, Mediolanion is worth noticing, because the classical records of these four names are limited to the three authorities mentioned.

We have mentioned above that two of four Gallic towns in *C* have vignettes with towers on the *Tab. Peuting.* — a circumstance which points towards statistical parallelism. We have likewise mentioned the close correspondence between the tribal names of *Prot. C* and those of *Tab. Peuting.*

Towards the east, both descriptions extend as far as to the Cherusci and no further. In the part of Gaul situated north of the Loire, the *Tabula* contains hardly any additions to the stock of *Prot. C*. We notice only Veneti, Osismi, Franci; the last-mentioned name must be regarded as added after Ptolemy's times, as it existed scarcely before our era and occurs never in literature before the publication of the *Tabula*.

If Fabiranon is correctly interpreted as Foro Adriani, *Prot. C* would originate from the times of the Emperor Hadrianus, i. e. after 117, or at least its last edition would belong to this period.

i. Examination of Details.

On practical reasons, the details concerned have been discussed under the heading "Ptolemaic localisation".

Artaunon confirms the present forms of the name, French Arlon (occurring since 870, according to "La grande Encyclopédie"), Flemish Aarlen. The form Orolauno of the *Itinerarium Antonini* is of similar age, appearing both in inscriptions and documents. Perhaps the ambiguous spelling *Arlaunon & Orolauno denotes an old contrast between Gothic and Celtic pronunciation, as in Masa versus Mosa (the Meuse), Wasgenwald versus les Vosges, etc.

j. Conclusion.

The main interest of *Prot. C* is merely literary, consisting in the fact that it helps to illustrate the genesis of the *Tab. Peuting.* and the *Itin. Anton.*

§ 25. LOCAL PROTOTYPE *D* = SWABIAN TRIBES ABOUT THE LOWER ELBE.

a. Summary of Contents.

Prot. *D* is only traceable as a fragment. It is a local description of the Swabian group, containing only tribes. A duplicate name occurs in *Aa* (or perhaps two). There are Greek marks. Affinity with Strabo and Tacitus. Cf. Fig. 2.

b. Ptolemaic Localisation.

The Ptolemaic constructor has introduced Prot. *D* into the interior part of the Germanic territory belonging to Prot. *A*. From the physical point of view, *D* has left no trace, but its presence is apparent from the large displacement of well-known names. The Semnones are fairly speaking correctly localised, but the Angles have emigrated from the Baltic shore to Thuringia, and the Langobards from the Elbe to the Rhine. Prot. *D* perhaps also contained the Ptolemaic Farodinoi in Mecklenburg = the Charudes from northern Jutland. — The position of the Swabians about the middle Rhine may be an inheritance (“apochronism”) from the year 58 B. C., derived from Cæsar who describes a Swabian attack against this region. The Angles seem to have obtained their place in interior Germany owing to erroneous identification with the *Angrivarii of Prot. *C*, cf. p. 119.

c. Definition of Limits.

The addition of “Sveboi” is the main characteristic of *D*. Incorrect arrangement distinguishes *D* from the elements of *Aa* in north-western Germany. Ptol. displacement from east to west distinguishes *D* from the elements of *C* with the Ptol. displacement from west to east. For further particulars cf. § 24.

d. General Topographic Scheme.

Not traceable. Prot. *D* seems to have been a descriptive text, no map.

e. Statistical Features.

Only tribes are traceable. The Angles are emphasized (as sole representatives of the Nerthus group, cf. under h.).

f. Occurrence of Duplicates.

Laggobardoï = Lakkobardoï *Aa*. Perhaps further Farodinoï = Charudes *Aa*.

g. Linguistic Marks.

Latin marks are not traceable.

The combination *ng* is written in correct Greek manner as *gg*: *Laggobardoi*, *Aggeiloi*. Cf. the contrasts in the surrounding prototypes: *LAKKOBARDOI Aa* (pointing to an original *LANCOBARDI), *Angri-varioi Aa*, *Askalingion C*, *Asanka*, *Singone B1*, *Marvingoi B2*, regular *ng* in *Acde*.

Instead of *Semnōnes* we might expect the spelling *Semnōnes*, as used by Strabo. But even the Senonic Gauls in Italy are by Ptolemy written *Semnōnes*, and Dio Cassius has the same spelling, LXVII, 5. Evidently, the Semnones as an important tribe had a relatively fixed orthography, which preferred the *ō*, because the Greeks knew the name through the medium of Latin.

h. Literary Milieu.

Prot. *D* recalls Strabo and Tacitus, the only two authors who emphasize the Swabian group in a similar manner. The designation of the tribes round the Elbe as Swabians must be referred to the establishment of King Marbod's great Swabian Empire about the beginning of our era. The Semnones and Langobards are directly mentioned as Marbod's subjects or allies, cf. Tacitus, "Annals" II, 45 (17 A. D.). Also the Angles as neighbours of the Langobards may have belonged to Marbod's vassals. — As the Angles were no Swabians in the ethnic sense, the continued designation "Sveboi Aggeiloi" must be regarded as a "political apochronism". This antiquated designation, together with the solitary instance of the name of the Angles, constitutes a typical affinity with Tacitus. The antiquated "Swabian nationality" re-appears in his description of the Aestui, who were in reality no Gothic nation, but belonged to the Lithu-Prussian group; cf. Strabo VII, 290, who represents Marbod as king of the "Sibinoi" i. e. the Sudines in Prussia.

The selection of tribes also betrays a marked affinity between Prot. *D* and Tacitus. The *Farodinoi D* (? Charudes *Aa*) may be re-discovered in the Tacitean *Suardones* or *Suarines* who belong to the Anglian group. In Prot. *D* the Swabians are represented by the Semnones, the Langobards, and the Angles. In the "Germania" of Tacitus, the Semnones and Langobards are named first, and emphasized as the most prominent representatives of the group. The Angles belong to a special group of Swabian tribes, worshipping Nerthus, and mentioned directly after the Langobards. It is true, the Angles are not given by Tacitus special prominence over the other six Nerthus-peoples, but we do not require the evidence of the Roman author to realize that they were in reality the leaders of the community. We may say that the combined evidence

of Prot. *D* and Tacitus points towards a source that valued the Angles according to their actual prominence which remained otherwise concealed in historical literature till the times of Procopius, 6th century.

i; j. Examination of Details; Conclusion.

In spite of all Ptolemaic confusion, Prot. *D* contains one highly valuable detail, viz. the name of the Angles. We are informed that they are the neighbours of the Langobards towards the north or north-east, — a statement which is made nowhere else in classical literature. Of course, we must remove the Langobards of *D* back to the place of the correctly situated alter-ego in Prot. *Aa*, the “Lakkobardoi” in the present Bardengau round Lüneburg. Consequently, the Angles must be placed north or north-east of the region, i. e. fairly in their traditional home-
stead, the district of Angel in Slesvig or South Jutland. Thus Prot. *D*, far from contradicting the venerable Bede, in reality proves his most valuable supporter. The unanimous evidence of local nomenclature, linguistic features, religious institutions, and genuine English, Danish and German tradition, is thus crowned by the hitherto missing element, the evidence of classical cartography. It is needless to discuss the matter any more¹).

§ 26. COLLECTIVE PROTOTYPES *E* & *F* = EASTERN GERMANIA, SARMATIA EUROPÆA & ASIATICA, AND SCYTHIA.

a. Summary of Contents.

Prot. *E* & *F* are collective maps, describing eastern Germany, Sarmatia Europæa, Sarmatia Asiatica, and Scythia, containing all sorts of geographic categories; *F* is besides marked by a system of “ethno-topic denomination”. The prototypes are duplicates of each-other; scattered duplicates occur in *Aa*, *Acde*, *B1*, *B2*. *E* has Latin marks (Sarmatai instead of Skythai *F*), but seems to have been translated into Greek be-

¹) We must here urge Chadwick’s warning against rejecting the well verified native tradition in favour of the somewhat older, but peripheral evidence of an inaccurate classical geographer like Ptolemy. As long as the genesis of Ptolemy’s work remained unexplored, his evidence in the Anglian question was practically worth nothing. — We may add one hitherto ignored piece of traditional evidence concerning the Angles. The Quedlinburg Annals, written in the 11th century, say ad annum 445: “The Angles, conducted by their king Angling, leave the country of the Danes”.

fore the stage of Ptolemy. *F* has only Greek marks. — *E* & *F* are executed after the introduction of a well established Roman amber trade with the Baltic regions under the reign of Nero. Affinity with Pliny, including antiquated Herodotian names. Cf. Figures 3, 17, 18, 19, 30, 31.

b. Ptolemaic Localisation.

E is totally displaced, *F* is correctly localised.

The Ptol. constructor has compressed Prot. *E* within the sections called Sarmatia Europæa and Asiatica, partially owing to the fact, that the Scythians were in this prototype called Sarmatai. *E* has been turned round, so that west becomes south, and east becomes north. Thus the Germanic part occupies the south-western edge of Sarmatia Europæa, whereas the remainder of the prototype forms the most northerly periphery of the Sarmatian sections.

Through this displacement, the eastern Baltic coast was enriched with some three or four rivers, originally flowing into the Black Sea, viz. Rhodon = Rhode, Turuntes = Karkinites(?), Chesinos = Acesinus. The fourth river, Chronos, may also be a transplanted one, or it may be a really Baltic river, originating from Prot. *F*. The river pAsiakes *E* = Axiakes *F* still keeps its place in the region of the Black Sea (together with the towns Leinon, Erkabon, and Trabana = Leianon, Sarbakon, and Tabana *F*)¹).

The displacement was to a great extent due to the misinterpretation that the Baltic coast was taken for the river Vistula. This fact appears clearly from the Ptolemaic tribes, localised east of the Vistula: Ombrones = Ambrones, the companions of the Cimbri and Teutones; Auarinoi = the Varines, a well-known tribe from Mecklenburg; Frugundiones = Burgundians, inhabitants of Pomerania.

Prot. *F* meets Prot. *Aa* in the Baltic region, cf. the duplicates Teutones-Auarpoi *F* = Teuton. . Ouirunoi *Aa*. Correspondingly, *F* meets *Ac* near the Black Sea, cf. Harpioi with town Harpis *F* = Karpianoï *Acde*. In the Baltic region, the details of *F* are distributed among those of *B1* & *B2* so that they are not easy to discern.

We suppose that Prot. *F* has been enriched with the contents of *Sk*, i. e. Scandia, before both of these prototypes were amalgamated with the collective prototype *A*. Only through this assumption, we are able to explain the occurrence of the name Finnoi in Prot. *E*. As *E* appears generally as an extract of *F*, the description of Scandia with the name Finnoi seems to have been incorporated with *F*, before the extract was made.

¹) Most of the identifications are suggested by C. Müller.

d. General Topographic Scheme.

Both *E* and *F* contained coasts of the Black Sea and of the Baltic. The design of *E* seems to have been so indistinct that the coast of the Black Sea might be mistaken for a mountain-chain in *F*, — The latter prototype was an excellent map and may be regarded as the main foundation of the Ptol. maps of Sarmatia and northern Scythia. Here we notice, as Müllenhoff remarks, the Caspian Sea for the first time correctly represented as an inland water and not as an inlet of the northern ocean.

The design of mountains in *F* seems to contain true observations of the low ranges of hills running through eastern Europe: Peuke = Lysa Gora in Poland, Wendian Mountains = the hills of Suwalki east of Prussia, Bodinian-Alanian-Ripæean Mountains = western Russian Range, Hyperborean Mountains = Waldai Hills. However Sadowski maintains that the so-called mountains are simply theoretical expressions of water-sheds, s. "Die Handelsstrassen der Griechen und Römer durch das Flussgebiet der Oder-Weichsel".

Finnoi = Finns in Finland or Scandinavia. — The coast of the Black Sea in *E* seems to have been mistaken for the mountains of interior Sarmatia *F*, whereas these same mountains, as they appeared in *E*, were in return mistaken for the Baltic coast in *F*. Thus a complete turning upside down was effected.

The decoration of the utmost north of Europe with numerous antiquated or fabulous Herodotian tribes, such as Melanchlainoi and "Horse-foot-men", seems to be a sort of intentional swindle, committed in order to conceal the Ptol. constructor's ignorance about this extremity of the world.

The Ptol. constructor has treated Prot. *F* quite otherwise than its alter-ego *E*. He localised *F* correctly, and he could hardly avoid it, owing to its evidently distinct and finished design. It has been amalgamated with Prot. *A* without any trace of inconsistency. And probably, we owe to Prot. *F* a great deal of the physical framework in the eastern parts of Ptolemy's atlas. As might be expected, Prot. *F* has not completely escaped deterioration through the Ptol. constructor, — one such case will be mentioned under e —; still such cases are of minor importance.

c. Definition of Limits.

Taking it as a whole, *E* and *F* are easily distinguished from each-other, partially through the series of duplicates, partially through the contrast of wrong and correct localisation. An additional criterium is the designation "Sarmatai" in *E*, replacing "Skythai" in *F*; further the system of "ethno-

topic denomination" of *F*, cf. under e. The occurrence of the denomination "Sarmatai" in *E* is connected with the fact that the Ptol. constructor has limited this prototype to the so-called Sarmatian sections of the atlas, not only in Asia (cf. above p. 128), but also in Europe. *E* generally occupies the most northerly periphery which was left blank in *F*. Owing to this circumstance, the confusion of *E* and *F* is comparatively little. However, in western Sarmatia there is a somewhat large area of confusion. The displaced Baltic tribes of *E* — Ombrones, *Ouarinoi, Frugundiones, Sulones, Finnoi — stand south of their correctly localised alter-egos in *F*. Likewise, the names pAsiakes, Leinon, Erkabon, Trabana of *E*, belonging originally to the regions near the Black Sea, are placed in the middle of elements originating from *F*.

The displaced Baltic detachment from *E* stands in an isolated position, in sharp contrast to the correctly localised names on both sides: those of Prot. *BI* in the west, and those of Prot. *Acde* in the east. The tribes Ratakensioi and Kotensioi inside the Dacian area of *Acde* may originate from *E*. Otherwise, Prot. *E* collides with no prototypes except its own alter-ego *F*.

e. Statistical Features.

Prot. *E* has a less copious selection of details than Prot. *F*. The complete absence of towns in the northern parts of *E* contrasts with the copious lists of towns in the neighbouring Prot. *BI*, and also in the Ptol. description of Jazygia.

Prot. *F*, as we have repeatedly mentioned, is marked by the system of "ethno-topic denomination". Its western vanguards are: the Venedai with Venedian mountain and gulf, i. e. represented as inhabitants of the eastern Baltic coast; the Peukinoi with the mountain Peuke; the southern outpost of the Peukinoi on the island of Peuke in the Danubian Delta; the Harpioi with the town Harpis.

The presence of "ethno-topic denomination" at a Pre-Ptolemaic stage appears from the following correspondences, noticed by C. Müller:

A. Caucasian Region.

- 1a. Paniardis, district
- 2a. Konapsenoi, tribe
- 3a. Korax, mountain.

B. Siberian Region.

- 1b. Paniardoï, tribe
- 2b. Konadipsas (Kanodipsas), district
- 3b. Koraxoi, tribe.

The two lists of names originally must have formed a chain of "ethno-topic denomination", but in Ptolemy's work they have been split up, list B being transplanted far away from its proper place, and hence it

appears that Ptolemy did not invent the system of "ethno-topic denomination", but found it ready-made in an earlier work.

In the neighbouring prototypes, the cases of "ethno-topic denomination" are so rare that they may be regarded as accidental. We notice e. g. within the area of Prot. *Aa* these three cases: Kimbroi with Kimbrike Chersonesos, Saxones with Saxon islands, Virunoi with town Virunon.

f. Occurrence of Duplicates.

The duplicate series of Prot. *E* and *F* (Fig. 24) is very long, containing some 24 pairs of names. It could scarcely be expected that parallel chains of such a length would agree completely in the order of links. Yet the approximate agreement of the series — especially in the upper lists (Auarinoi . . . Hippofagoi Sarmatai *E* = Auarpoi . . . Hippofagoi Skythai *F*) — must be called surprising and excludes any chance of accidental coincidence. Since our first article in "The Scottish Geographical Magazine" we have suggested a new equation: Gelônoi *E* = Gêiounoi *F* (Cod. Palat. 191, instead of the hitherto accepted reading Gêouênôi). There are also some duplicates or triplicates which serve as means of distinguishing *E* and *F* from the other prototypes.

Auarinoi <i>E</i> , Auarpoi <i>F</i>	= Ouirunoi <i>Aa</i> .
Teutones <i>F</i>	= Teuton(-oaroi) <i>Aa</i> .
Harpioi with town Harpis <i>F</i>	= Karpianoï <i>Acde</i> .
Ratakensioi <i>E</i> ?	= Rakatriai <i>B1</i> , Rakatai <i>B2</i> .
Kotensioi (Kontekoi) <i>E</i> ?	= *Kotnoi <i>B1</i> , *Koteinoi <i>B2</i> .

g. Linguistic Marks.

The final editorial language of both *E* and *F* seems to have been Greek. Cf. the following peculiarities:

Spelling *au* instead of the Latinising *aou*: *Sauaroi E* = *Nauaroi F*.

Misreading *au* for the Greek *ou*: *Auarinoi E* = *Auarpoi A*, contrasting *Ouirunoi Aa* (< *Viruni*).

Misreading *Pasiakes E* (= *Axiakes F*) = **Potamos Asiakes*.

Constant "omega" in the termination *-ônes*: *Ombrônes*, *Frugundiônes*, *Sulônes*, *Karbônes*, *Vibiônes*, *Gelônes*, *Igylliônes E*, *Gythônes*, *Kariônes*, *Eluaiônes F*.

But in *E* we notice traces of a Latin pre-existence. The most conspicuous is the term "Sarmatai" instead of the Greek synonym "Skythai", see above. E. g. the Herodotian *Basilikoi Skythai* appear as *Basilikoi Sarmatai*, etc. If this translation is omitted in the name *Exobygitai* = *Hamaxobioi Skythai F*, it seems due to the circumstance that the name

had in *E* become unreadable at an early stage. The distortion itself seems to point towards a Latin document: the misreading -BY- would originate from a Lation -BII rather than from the Greek -BIOI, and -GITAI from a vulgar Latin *SCITHAE rather than from the Greek SKYΘAI. — The name Portakra in the Crimea, probably originating from *E*, contains the Latin word portus, "harbour".

We have mentioned in § 16 that the Latin traces of Prot. *A* form a marked contrast to the Greek traces in the duplicates on the western frontier of Prot. *F*: Latin correcture *"Vari" over *"Viruni" *Aa* facing the Greek misreading Auarpoi = Ouarinoi *F*; Latin termination in Karpiano *Acde* facing the ethno-topic couple Harpioi-Harpis *F*.

h. Literary Milieu.

The entire literary milieu of Prot. *E* and *F* cannot be investigated here, as it would lead us too far into the history of Asiatic geography. It must be sufficient to state the conspicuous affinity with the sphere of Pliny.

This affinity appears perhaps most strikingly at the western edge of the area concerned: Auarinoi-Frugundiones-Sulones *E* = Auarpoi-Burguntes-Gythones *F* seem to be identical with Pliny's list of "Vandilian" tribes, IV, 99: Burgundiones-Varinne-Gutones. It is true that Müllenhoff in his "Germania antiqua", p. 93, eliminates "Varinne" as a distorted duplicate of the immediately following Charini, the Harii of Tacitus. We, however, cannot admit his opinion as justified; for "Varinne" is not far from the well-known tribe-name Varini, and the existence of a traditional Baltic list, Varini, Burgundiones, Gutones, seems confirmed through the coinciding evidence of three authorities, viz. Prot. *E*, Prot. *F*, and Pliny.

In the description of the Mæotian coasts, the affinity between the two prototypes and Pliny is equally conspicuous.

1. Common affinities.

Tribes: Neuroe, Hamaxobii, Rhoxolani, Aorsi, Geloni.

Rivers: Axiaces, Pacyris, (Carcinites = Turuntes *E*).

2. Pliny and Prot. *E*.

Tribes: Basilidae, Agathyrsi.

Rivers: Rhode, Acesinus (C. Müller, I, 412).

3. Pliny and Prot. *F*.

Tribes: Budini, Tyragetae; colony of Cares = Karoia (C. Müller, I, 418).

Towns: Nauarum, Carcine, Taphrus.

Rivers or Gulfs: Buces, Gerrhus, Hypanis, Panticapes, Coretus = Poritos, sinus sAggarius = Agaros.

The geographical work, from which Pliny extracts his description of the Mæotian coasts, is subjected to detailed examination by Müllenhoff in his "Deutsche Altertumskunde", III, 53 seq. Mela used the same work. It is marked by the presence of numerous Herodotian names which were in Mela's and Pliny's times already antiquated. We re-discover most of them in Prot. *E*, whereas an editor of Prot. *F* has evidently tried to reduce the anachronistic character by eliminating antiquated names, apart from some residuals such as Bodinoi and Gêiunoi = Gelonoi *E*.

Sometimes we notice that Pliny and the Ptolemaic prototypes represent the same development leading away from the original source. E. g., all of the three authorities add new names, such as Hamaxobii, Rhoxolani, Aorsi. The Agathyrsoi are by *E* placed among the Mæotian tribes, corresponding to Mela and Pliny, whereas Herodotus placed them in Dacia. The Herodotian name Hypakyris is unanimously written without the initial syllable Hy-. The Neuroi appear with a town Nauarum Pliny = Nauaron *F*; the same new vocalisation appears in the *Nauaroi (Sauaroi) of *E*.

This line of development seems to have been continued by *E* and *F*, introducing several times a contrast to the stage of Pliny. E. g., the Herodotian river Hypakyris is still by Pliny preserved as the river Pacyris, whereas *E* and *F* turn it into a race-name: the tribe Pagyritai *E*, = the town Pasyris *F* (C. Müller, I, 432). Whereas Pliny leaves the Herodotian Neuroe unaltered (beside the town Nauarum with the new vocalisation), *F* writes not only Nauaron, but also Nauaroi = Sauaroi *E*.

Whereas the affinity between *E*, *F*, and Pliny appears at the first glance, there are generally no traces of special affinity between the two prototypes and Tacitus. We miss almost entirely the tribes, mentioned by Tacitus as inhabitants of north-eastern Europe: Aestui, etymologically = Esthonians, with "lingua Brittannicae propior" (probably a disguised notice of the Pruteni or Prussians); Sitones, governed by queens, i. e. a disguised notice of the Quænes; Hellusii; and Etiones, i. e. the Jøtnar of Norse tradition.

However, Prot. *E* contains at least one marked affinity with Tacitus, namely the presence of the Finns, who are not mentioned in those books of Pliny which have been preserved.

i. Examination of Details.

In spite of all confusion, Prot. *E* contains at least one valuable topographic detail, viz. the name of the Ombrones. This tribe is mentioned nowhere else in geographical literature, but we recognize it as identical with the historical Ambrones, the companions of the still more famous

Teutones and Cimbri. Cf. Müller's edition, I, p. 424. Through *E* we are informed about their localisation. They appear south of the Auarinoi, read: west of the Ouarinoi in the present Mecklenburg, — a tribe which is known among the Anglian tribes worshipping Nerthus. — We may identify the Ambrones with the present Amrings, living on an island west of Slesvig called Amrum, in mediæval times Ambrum. Perhaps the name has also some connection with Imbræ, as the island of Fehmern was called in Old Danish. In the Old English epical catalogue *Widsith* the tribe re-appears as *Ymbre*, and Welsh authors such as *Nennius* still used *Ambrones* as synonymous with Saxons.

j. Conclusion.

The prototypes *E* and *F* must be called well verified both from topographic, linguistic, and literary points of view.

Prot. *E* contains only one valuable individual element, viz. the tribe-name *Ombrones*, localised *west of the **Ouarinoi*. Otherwise, its value consists in the thoroughgoing confirmation which it affords to the duplicate prototype *F*.

The latter, on the other hand, is one of Ptolemy's most valuable sources. We notice especially the correct representation of the Caspian Sea as an inland water.

§ 27. LOCAL PROTOTYPE *S \acute{k}* = THE SCANDINAVIAN PENINSULA.

a. Summary of Contents.

Prot. *S \acute{k}* is a special map or description of the Scandinavian Peninsula, containing tribes only. — No duplicates, except *Finnoi* in *E*. — Greek marks. A limited affinity with *Tacitus*. Cf. Figures 3, 20.

b.; c. Ptolemaic Localisation; Definition of Limits.

It seems that Prot. *S \acute{k}* was amalgamated with Prot. *F* before the Ptolemaic stage, cf. § 24 b. The Ptol. constructor introduced *S \acute{k}* into the outlines of the Peninsula of Scania, as represented in Prot. *A* (from the local prototype *Aa*). The area of Scania was of course far too narrow to contain the seven Scandinavian tribes of *S \acute{k}* , and therefore most MS. copies of the Ptolemaic atlas simply leave the map blank. This is one of our principal reasons for concluding that *S \acute{k}* must have a different origin from the Scandian coast design of the atlas. Another reason will be found in the commentary on the literary criteria.

d. General Topographic Scheme.

The physical nature of the Scandinavian Peninsula makes it self-evident that this country must have been described in a separate prototype.

e. Statistical Features.

Prot. *Sk* contains only tribes. These are well selected as they represent generally the more important inhabitants of the peninsula. The *Finaithoi, or people of Finveden, would perhaps not seem important from a modern point of view, but as a matter of fact they appear again in the next detailed description of Scandinavia, namely that which is given by Jordanis in the 6th century; we may identify them with the primæval inhabitants of the entire province of Småland. It is highly remarkable that the Norwegians are represented by the inhabitants of Hedemarken: for this province is actually the most fertile in the whole of Norway and must have been an original centre of Gothic race within this country.

f. Occurrence of Duplicates.

Finnoi, re-appearing in *E*, cf. § 26.

g. Linguistic Marks.

All marks of Prot. *Sk* are Greek.

Spelling *eu*, not the Latinising *eou*: *Leuðnoi*.

Misreading *ou* for *au*: *Goutai*.

Misreading *au* for *ou*: *Fauonai* = **Souionai*.

Spelling *-ðnes* with "omega", not with "omikron": *Leuðnoi*, *Daukiðnes*.

Thus the original document seems to have been Greek from the very beginning, never subjected to Latin transcription.

h. Literary Milieu.

The contents of Prot. *Sk* are quite unique. Only few or vague affinities are found in classical literature.

Already Mela knew the "island of Codanovia", i. e. Scandinavia, Scandinavia = Scandia. But he seems to have known little more than the bare name.

Prot. *Aa* has a relatively exact description of the coast of Scania, but nothing else, cf. § 20.

Pliny has an essentially wider knowledge about the Peninsula, evidently dating from the lively mercantile intercourse with the Baltic amber coast, established under the Emperor Nero. Not only does Pliny repeat the

names Scandia and Scadinavia, already known by *Aa* and *Mela, but he supplies several new details. He also seems to have known a description which represented the "island" of Scandinavia correctly as a peninsula, — only he did not recognize the identity of Scadinavia with the peninsular country mentioned. The peninsula, he says, contains the immense mountain Saevo = Kølen and Dovre in Norway, IV, 99. The dimensions of the "island of Scadinavia" are much better known by Pliny than by Ptolemy: it is not that tiny bit which appears on the map, but a country which rivals the remainder of Europe in size. This is represented as the opinion of its inhabitants, who only cover a portion of the island, although they embrace 500 counties (*pagi*). The name of the inhabitants is mentioned: "Hilleuionum gente", perhaps to be amended into "illa Suionum gente", as there follows a relative sentence¹). Besides, Pliny reports fabulous stories about the Scandinavian fauna.

Pliny's correct ideas of the dimensions of Scandinavia re-appear in Prot. *Sz*. And, as we have pointed out, the name of the Swedes is perhaps common to the two authorities. But otherwise, the milieu is rather that of Tacitus and his age.

Tacitus is strikingly well informed about the Scandinavian Peninsula. His detailed data seem especially remarkable, when compared with his vague ideas about the Cimbric Chersonese. Evidently, the wide extension of the Tacitean horizon over the Scandinavian Peninsula is due to the continued and growing intercourse of the Romans with the Baltic amber coast²). In Scandinavia, Tacitus mentions only two nations, Swedes and Sitones; besides, his Finns may be assigned to the same sphere. Probably, he knew more, but did not regard it as advisable to fill his brief survey with mere names. In return, the nations mentioned are relatively exactly described. Tacitus records the Swedish kingdom, the Swedish navy, and a series of customs which evidently point towards the national Swedish cult of the male Nerthus or Freyr. The Sitones, according to Tacitus, are governed by queens. It is a popular tale, originating from their Scandinavian name, Kvæner. In mediæval literature, the country of the Kvæner was called "terra feminarum", i. e. "womenland". The Kvæner are in reality Finns, although Tacitus regards them as Swabians, i. e. as a Gothic nation. Finally, Tacitus describes the Finns, whom he seems to have regarded as living on the continental coast opposite Scandinavia. Their poor living and savage customs are described in a detailed way.

¹) Suggested by us in Salmonsens "Illustr. Konversationslexikon". Also suggested by Löffler.

²) Cf. the word *lukarna-staki* ("candle-stick") on the island of Gothland, borrowed from the Gothic *lukarna-stapa* = Latin *lucerna*. It is a most striking evidence of the influence of Roman trade on Scandinavia.

If we compare Prot. *S**k* with Tacitus, we find both a general and special accordance. Both authorities have more exact ethnic details from Scandinavia, than Mela og even Pliny had. Both authorities know of Swedes and Finns. The latter nation is unknown apart from Tacitus and Ptolemy down to the end of antiquity. When the Finns re-appear in Prot. *E*, they seem to originate from Prot. *S**k*, through the medium of Prot. *F*, cf. § 24. The fact that the Finns are the sole representatives of the nations from Scandinavia in Prot. *E*, seems to show that Prot. *S**k* characterized them in a similar manner, as did Tacitus.

i. Examination of Details.

North: Finnoi = Finlanders.

West: Chaideinoi = Heinir in Heiðmørk, now Hedemarken, Norway.

East: *Souionai (Fauonai) = Swedes, in Upland.

— : *Finaithoi (Firaisoi) = the Finaithae, in Finnheiðr, now Finveden. As they are placed in the east, we must assume that they occupied the entire space between the Baltic coast and the county of Finveden, that is to say: the present province of Småland. The name survived on the western frontier owing to the ethnic contrast to the Scandinavians.

South: *Gautoi (Goutai) = Götlanders.

— : *Daneiones or *Dankiones (Daukiones) = Danes, in Scania; perhaps with suffix *-k* as in the Danish Fanniker, Manniker, Lolliker, Lyviker i. e. inhabitants of the islands Fanø, Manø, Laaland, Livø.

Only the midland tribe, Leuonoi, cannot be identified with certainly; perhaps near Liongakøping (Linköping).

Some authors have connected them with the Liothida of Jordanis who are, however, in reality the inhabitants of the Scanian county of Liuthguth.

Cf. also the Leones, mentioned in the Old Engl. epical catalogue Widsith without definite localisation.

The emendations Fauonai, Daukiones > *Souionai, *Daneiones (or *Dankiones) are necessary. It would have been impossible in a detailed list of tribes like Prot. *S**k* to omit mention of the Swedes, the only Scandinavian tribe of real Gothonic nationality noticed by Tacitus. And among some hundred Gothonic tribe-names, there is only a single one with the initial sounds Da-, viz. the Danes. Cf. our § 7.

j. Conclusion.

Prot. *S**k* may be called well verified both from topographic and linguistic points of view.

It is a most excellent piece of ethnic topography. The localisations are all correct. We notice especially the correct selection of names according to their statistical prominence.

§ 28. THE POSITION OF THE CIMBRIC CHERSONESE AND THE SCANDIAN ISLANDS WITHIN PTOLEMAIC GERMANIA.

After finishing our survey of Ptolemaic prototypes, we reserve a separate paragraph for the question of limits which has been provisionally mentioned in § 16, d. Cf. Figures 28, 29.

Generally, it is taken for granted that Ptolemy represents the Cimbric Chersonese and the Scandian islands as Germanic without making any distinction from the area of the present Germany. He is again supposed to agree with his predecessors, Pliny and Tacitus, and the assumed-common scheme of these three authors is regarded as the classical norm.

Only some few modern scholars interpret the classical evidences differently, introducing a scheme of distinction within the area of classical Germania. So e. g. Ad. van Kampen, in "Perthes' Atlas antiquus", 1892, incorporates the Cimbric Chersonese with Germania, whereas the Danish islands and the Scandinavian peninsula are placed outside, designated as Germanic in a less pronounced degree. The map concerned reappears unaltered in the 8th edition, 1908, published by Max Schneider. K. Wolff, in the 6th edition of Meyer's "Konversationslexikon", 1906, makes Germania embrace also the Danish islands, but still places the Scandinavian Peninsula apart.

It must be admitted that those authors are mistaken who believe that Ptolemy represents Scandinavia as belonging to Germania without any restriction. The actual Ptolemaic distinction, however, differs radically from the schemes of the cartographers v. Kampen, Schneider, and Wolff.

The northern frontier of the classical "Germania proper", according to Ptolemy, does not exceed the limits of present Germany, nay, of the Germanic Confederation before 1864. The Cimbric Chersonese and the Scandian islands are represented collectively, as a separate section.

This appears from a series of various observations.

1. Within the Ptolemaic text description of Germania, the Cimbric Chersonese is the only continental district which is represented separately. In other parts of Germania, the Ptol. constructor or his prototypes rather effaced existing sub-divisions. E. g., there is no trace of the Limes district, although it was occupied by the Romans, defended by strong frontier walls, and described in one of Ptolemy's special prototypes. — Instead of Bohemia, Ptolemy mentions a tribe of Bohemians, and corre-

spondingly, the district of *Teurio-chaim has given rise to a so-called tribe Teurio-chaimai.

2. The Cimbric Chersonese and the Scandian islands contain only tribes, whereas the entire area of Germania proper contains in addition towns and other local details. This is a distinction, introduced arbitrarily by the Ptol. constructor. The Romans had visited the Cimbric Chersonese with their navy, and knew from practical observations details of this country, such as the headland Thastris (or Chartris), and the gulf Lagnus. On the other hand, the Roman armies and navies never visited what constitutes present Germany east of the middle and lower Elbe, and the Romans had no traceable connection whatever with the region between the Elbe and the Oder. Consequently, the Ptolemaic towns and rivers within the latter region must be regarded as fictitious. They are introduced by the Ptol. constructor, in order to produce the impression of homogenous geographical knowledge, embracing the entire area of "Germania proper". The Cimbric Chersonese and the Scandian islands are purposely represented differently, as the less well-known periphery of the Ptolemaic horizon.

3. Some of the oldest MS. atlases, viz. the Urbinas 82 and the Athous Vatopediensis, write the name "Kimbrike Chersonesos" with capital letters which are only a little smaller than those of the "Germania megale". (Noticed by J. Fischer).

4. Some of the oldest MS. atlases, viz. the Athous Vatopediensis and the Burney III, represent the Cimbric Chersonese with colour, whereas the area of Germania proper is left blank. The Athos atlas extends the Cimbric colour also over the Scandian islands. It must be noticed that the two named MSS. represent both versions of the Ptolemaic atlas.

We state: the only traceable boundary-line within classical Germania is the Ptolemaic which separates Germany from Denmark or Scandinavia.

§ 29. CONCLUSION.

Our above investigations have given rise to a vast mass of hypotheses within a field of study which has hitherto been scarcely cultivated.

It is inevitable that such a first attempt will be productive of various errors, and we have already felt obliged to correct some mistakes, made in our previous sketches (in "The Scottish Geographical Magazine", etc.). We have also received letters from scholars who expressed doubts as to our results.

It is now the part of the critics to reject our theory, or, if possible, to replace it by a better one.

They may, e. g., try to reconstruct the assumable Ptolemaic prototypes on different lines, or to point out new and more decisive criteria.

The investigation of corresponding prototypes within other parts of Ptolemy's atlas will also prove a practical means of verification.

In face of all possible doubts and rejections, however, we venture to assume that one essential result has at any rate been obtained: the Ptolemaic chaos is no more left completely without serious effort being made to dispell it. One attempt has now been made.

Consequently, if geographers and ethnographers go on using the Ptolemaic data frankly as "positive" foundations, such as they have done for some five centuries, they will no more be able to excuse themselves with the absence of any genetic criticism. They will have to refute our statements, or to shrink anew from preserving and increasing the Ptolemaic chaos.

Even this result will prove of considerable benefit.

We hope that the eagerly expected publication of the Codex Urbinas 82 through Jos. Fischer S. J. will attract the attention of scholars to this highly interesting, but also badly neglected branch of study, so that finally the chaos may be dissipated and the buried treasures of Ptolemy's predecessors become accessible and be duly utilised.

Eskjær pr. Jebjerg, Salling, August 18th 1914.

APPENDIX

A.

§ 30. ADDITIONS TO § 19, PROTOTYPE *A*.

Cf. Fig. 30 (designed after the printing of § 19).

It deserves to be emphasized that Prof. L. Schmidt and the author of the present research have independently been led to the assumption of a prototype representing the physical map of Germany. We cannot indeed accept the traditional interpretation of the Ptolemaic mountains, as given by Schmidt: Melibokos = Harz, Semanus = Thüringer Wald, Sudeta = Erzgebirge, Gabreta = Böhmer Wald, but the principal basis of agreement is at any rate worth comment.

ad d. As we mentioned in our § 15, the Ptol. constructor seems to be fond of theoretical arrangements. One such is the Baltic coast-line, running straight west-east, cf. § 20 c. We may add that the same theoretical line west-east appears in the Melibokos, the Sudeta, and the Carpathian mountains; correspondingly, an inclination for a direction approximately north-south appears in the mountain Ketios south of the Danube, and in the rivers Vistula and Rhine. It need not be pointed out that such arrangements would chiefly affect the area of Prot. *A*.

It is possible that both the Athos Map and the Burney Map reflect an original design in which the mountains were not so artificially modified as in the current Ptolemaic scheme. At least we notice that a pronounced oblique direction prevails in the Melibokos, according to both maps, and in the Sudeta, according to the Athos Map.

Whereas Prot. *A* is probably not responsible for the horizontal and vertical lines of Ptolemaic mountains and rivers, we may, on the other

hand, attribute to this prototype the exaggerated distance between the German frontier rivers and the mountains behind them. We notice the exaggeration east of the Rhine and north of the Danube. It is easily conceivable that the Romans were well informed concerning the regions directly contiguous with their frontier; and the large amount of known details from such regions would naturally tempt a cartographer to exaggerate the space concerned on the map.

ad i. The so-called "town" Tulisurgion has in our § 20 c been compared with Tulifurdon in the vicinity, as a probable duplicate. Zeuss, "Die Deutschen", p. 7, suggests that Tulisurgion, Toulisurgion, is a misreading for *Teutiburgion, the famous wood in which the Romans underwent their fatal defeat in 9 A. D. — We now hold that his conjecture is correct, and therefore we have on our map Fig. 30 represented the vignette of the so-called "town" as a mountain which we attribute to the original prototype *A*. The vignette certainly occupies exactly the place of the mountain Teutoburger Wald, the present Osning.

Orkynios, Lat. Hercynia, is a Celtic name meaning "wood" or "wooded mountain". Its primæval Celtic form was *Percunia, corresponding to the Gothic word fairguni, "mountain". The original Hercynian Wood was a large complex of middle German mountains and in mediæval times the German form of the name -Fergunna, Vircunna, etc. — still adhered to two distant chains, viz. 1. Franken Höhe in Bavaria (probably a distortion: Franken for *Fergen); 2. Erzgebirge north-west of Bohemia. But the Ptolemaic Orkynios is neither of these; it must be the present Moravian Hills. At the southern extremity of this chain there is a mountain called Farren, which name seems to be a distortion of an ancient Gothonic *Ferhunja, a normal collateral form of *Fergunja according to Gothonic phonetic laws.

B.

§ 31. ADDITIONS TO § 22, PROTÓTYPES *Ac, Ad, Ae*.

On p. 82, we pointed out that the Tabula Peutingeriana has transplanted the words "Locī *VI regi(s)" from Dacia to Moesia, separating them from the continuation "Dac. Petoporiani". We suggested that the Tabula has correspondingly transplanted the town Sagadava = Zargidava Ptol., whereas Karsidava Ptol. would have been absorbed by the Moesian town Calidava Tab. Further considerations have confirmed our suggestions, as we have discovered the Ptol. correspondence to one of the "loci regis

Daci Petoporiani", viz. Piroboridava, read; *Piroporidava or *Pitoporidava. Ptolemy's *b* instead of *p* does not contradict the equation, as a similar shifting of media and tenuis appears in other Dacian names, cf. Biefoi = Piefigoi, Buridavensioi = Predavensioi, Potulatensioi = Polonda, Dierna = Tierna.

The Ptol. Piroboridava is placed in Moesia inferior, not far from the mouth of the Danube, but we must assume that the Ptol. constructor has displaced it too far towards the south-east together with Karsidava, whereas the accompanying town Zargidava was displaced towards the north-east. The Tabula Peutingeriana places the beginning of the words "Dac. Petoporiani" north of the Carpathian mountains, and the Ptol. position of Karrodunon *Ae* = Karsidava *Ad* is corresponding.

The Dacian king concerned, as we mentioned, appears in an inscription in Rome, Muratori 1039, 3: "D. M. Ziai Tiati fil. Dacae uxori Piepori regis Coisstobocensis Natoporus et Drilgisa aviae cariss. b. m. fecer." His people are obviously the Ptol. Koistobokoi in Roman Dacia, his residence is the Ptol. Piroboridava, and his other towns may be the neighbouring Tamasidava, Utidava, Trifulon, etc. We are informed by Dio Cassius LXXI, 12, that the Hasdings — a branch of the Vandals — invaded the country of the independent Koistobokoi about 172 A. D. He relates LXXII, 3, that a flock of 18,000 independent Dacians were about 180 A. D. received in Roman Dacia. The place-names Piroboridava and Tamasidava through their forms betray a relatively late origin, as no other names on -dava are compounded with so long words.

The combined evidence of Ptolemy, the Tabula, the inscription and Dio Cassius, affords a valuable piece of ethnic history dealing with north-eastern Dacia. We thus understand the relatively rich Ptolemaic description of such peripheral parts of the Empire.

The result is an interesting addition to our knowledge of ancient topography, but still more valuable is the statement that the edition of the Ptol. work can now *definitely* be dated as *originating from after 180 A. D.*, — a fact which we conjectured already from the occurrence of such tribal names as Biessoi and Sabokoi, cf. p. 89.

In our genetic perspective p. 89, we ought perhaps to introduce a Ptolemaic stage VI, represented by the most freshly acquired informations such as the "loci VI regis Daci Petopori". The Post-Ptolemaic stage would then become nr. VII.

BIBLIOGRAPHIC NOTES

§ 32. INTRODUCTION.

The following lists do not pretend to offer an exact bibliography, — not even approximately. As no regular attempt at a Ptolemaic bibliography has been made after 1837, it would be impossible to supply the want here, because the Ptolemaic statements are discussed and used in almost numberless works. It would be more than impossible during a time of European warfare, when visiting the libraries in the different capitals is prohibited.

We therefore only try to point out some of the more important publications, hoping that it may prove useful to ordinary readers, and perhaps also contribute some practical hints to the work of a future bibliographer.

A general bibliography down to the year 1837 is given by *Heeren*, "Literatura Ptolemaica".

§ 33. EDITIONS OF PTOLEMY'S GEOGRAPHY.

Famous, as it was, Ptolemy's Geography has been published in numerous editions or translations since the end of mediæval times. We shall name some of the most important.

1472. Latin translation, printed in Bologna.

1533. Editio princeps in Greek by *Erasmus*, Basel.

1838—1848. Edition with Latin translations by *Wilberg*, Essen. Contains the different readings of several MSS.

1843—1845. Ed. by *Nobbe*, Leipzig. Text-book for the practical use of scholars.

1867. *La Géographie de Ptolémée*. Phototypical reproduction of the Mount Athos Manuscript, incl. the accompanying atlas, by *Sewastionow* and *Langlois*, Paris. The seven first pages of the atlas which were lacking, when the edition was published, have later been rediscovered in the British Museum by *Jos. Fischer* who is preparing an edition.
1873. Edition of the chapters concerning Germany, Scandinavia and the neighbouring parts of Belgium and Sarmatia; in the "*Germania antiqua*" publ. by *Müllenhoff*, Berlin. Contains the different readings of several MSS. (arbitrary conjecture: *Kyenones* instead of *Leuonoi!*).
- 1883—1901. Edition with Latin translation and atlas by *C. Müller*, Paris (continued by *Kurt Fischer*; Vol. III has not yet been published). Contains the different readings of most MSS. (except from the manuscript copies of the atlas). Valuable foot-notes.

§ 34. EDITIONS OF THE PTOLEMAIC ATLAS AND OF SINGLE PTOLEMAIC MAPS.

1484. *Editio Ulmensis*, with coloured atlas, designed by the famous German cartographer *Nicolaus Donis*, Ulm.
1490. *Editio Romana*, with atlas, Rome. Republished by *Nordenskiöld* 1889 (see below).
1867. Atlas of the Mount Athos Manuscript, phototyp. reprod. by *Sewastionow* and *Langlois*, Paris (see § 33).
1889. *A. Nordenskiöld*, "Facsimile-Atlas to the Early History of Cartography" (*Editio Romana*), Stockholm.
1901. *Tabulæ XXX*, a Ptolemaic atlas, reconstructed by *C. Müller*, Paris (see § 33).
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1892. "Perthes' Atlas antiquus"; Gotha, by *Ad. v. Kampen*. With reconstructed Ptolemaic map of the world. 8th edition, 1908.
1900. *Felöc*, see § 35. With reproduced Ptol. map of Dalmatia from Cod. Urbinas 82.
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1910. *V. Novotný*, in the publ. of the Bohemian Academy of Sciences (see § 35 a). With reconstructed map of Germania.
1911. *R. Kiepert*, "Formae orbis antiqui" (1894—1914 seq.). With reconstructed Ptol. map of Europe.
1911. *Frithjof Nansen*, "In Northern Mists". With reproduced Ptol. map of Europe and northern Asia from the Editio Romana.
- 1913—16. *J. Fischer*, see § 35 a. Reproduced Ptol. maps of the world, of Spain, Germania, and Scythia, from various MSS.
1915. *A. Herrmann*, Reconstructed map of Central Asia according to the scheme of Marinus. Cf. § 35 a.

§ 35. RESEARCHES DEALING WITH PTOLEMY OR BASED UPON HIS STATEMENTS.

Under this heading, we try to point out some of the more important contributions to the general discussion of the theme, and besides some monographs dealing with the special topography of the Cimbric Chersonese.

Valuable bibliographic collections concerning the Ptolemaic geography of Germania are contained in *Novotný's* treatise "Ku kritice zprav Kl. Ptolemaia", 1910 (see below p. 147).

a. Researches dealing with Ptolemy in a more or less general sense.

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1828. *Heeren*, "De fontibus geographicis Ptolemaei", in "Comment. Gotting.", VI, p. 66.
1857. *E. v. Wietersheim*, "Ueber den praktischen Wert der speziellen Angaben in der Geographie des Claud. Ptolemaeus insbesondere über Germanien", in "Berichte der sächsischen Gesellschaft der Wissenschaften", IX, p. 112 seq.

1867. *C. Müller*, "Rapports sur les manuscrits de la géographie de Ptolemée", in "Archives des missions scientifiques et littéraires", II^{me} série, tome 4^{me}.
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1888. *Christ*, "Geschichte der griechischen Litteratur", in Müller's "Handbuch der classischen Altertumskunde", 8th edition, 1905, VII, p. 506.
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1901. *H. Zondervan*, "Allgemeine Kartenkunde", Leipzig.
1901. *W. Ketrzynski*, "Die uns von Claudius Ptolemäus über Germania Magna übermittelten Nachrichten", in "Publicationen der Akademie der Wissenschaften in Krakau, Anzeiger, phil. Kl. 95."
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1868. *P. Wislicenus*, "Die Geschichte der Elbgermanen", Halle.
1890. *A. Erdmann*, "Ueber den Namen und die Heimat der Angeln", in "Humanistiska Vetenskapsselskapets skrifter", Upsala. Reviewed by Herman Møller, "Anzeiger für deutsches altertum". Cf. our treatise "Var Anglerne Tyskere?", in "Sønderjydske Aarbøger", 1900, Flensborg.
1894. *J. F. Marcks*, "Die römische Flottenexpedition zum Kimbernlande und die Heimat der Kimbern", in "Jahrbuch des Vereins für Altertumsfreunde im Rheinland", Bonn.
1899. *Ihm*, art. "Cimbri", in Pauly & Wissowa's "Realencyclopädie der classischen Altertumswissenschaften".
- 1904—1909. *D. Detlefsen*, "Die Entdeckung des germanischen Nordens im Altertum", in Sieglin's "Quellen und Forschungen zur alten Geschichte und Geographie".
1907. *H. M. Chadwick*, "The Origin of the English Nation", in the "Cambridge Archaeological and Ethnological Series". Cf. our Review in "Arkiv för nordisk filologi", 1909.
1912. *R. W. Chambers*, "Widsith", p. 241 etc., in the "Cambridge Archaeological and Ethnological Series".

Further notice on existing literature may be found in the works of *Bremer*, *Novotny*, *Detlefsen*, *Nansen*, and *Chambers*.



MAPS
AND
ILLUSTRATIONS

Contents p. X (A)

(cf. extract of contents - XXXIII)

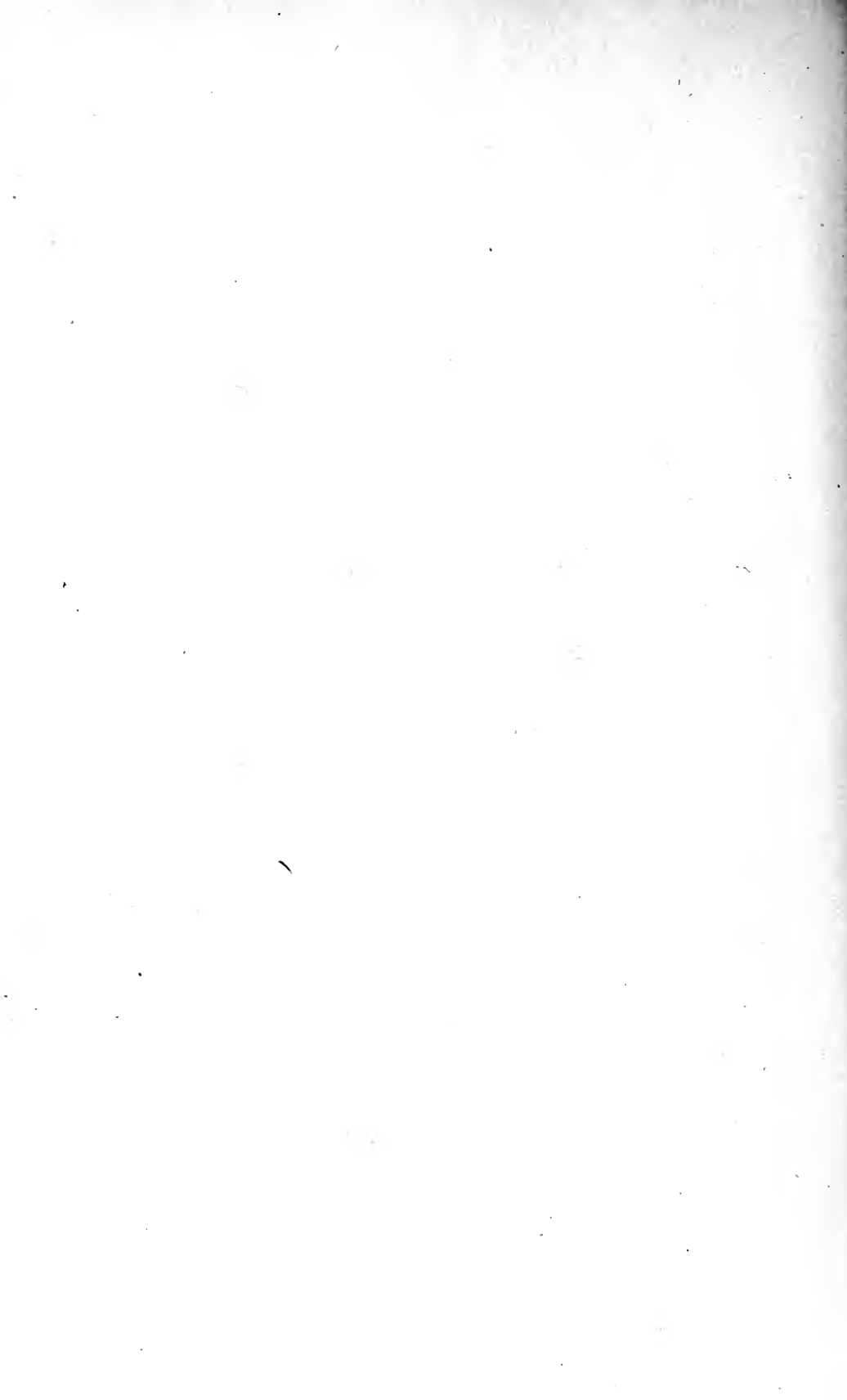


Fig. 2.
GERMANIA, CHERSONESUS CIMBRICA, SCANDIA
Version A

from the Codex Urbinas 82 in the Bibliotheca Vaticana, 13th century.

By permission of Prof. Jos. Fischer S. J. Cf. § 19—20.

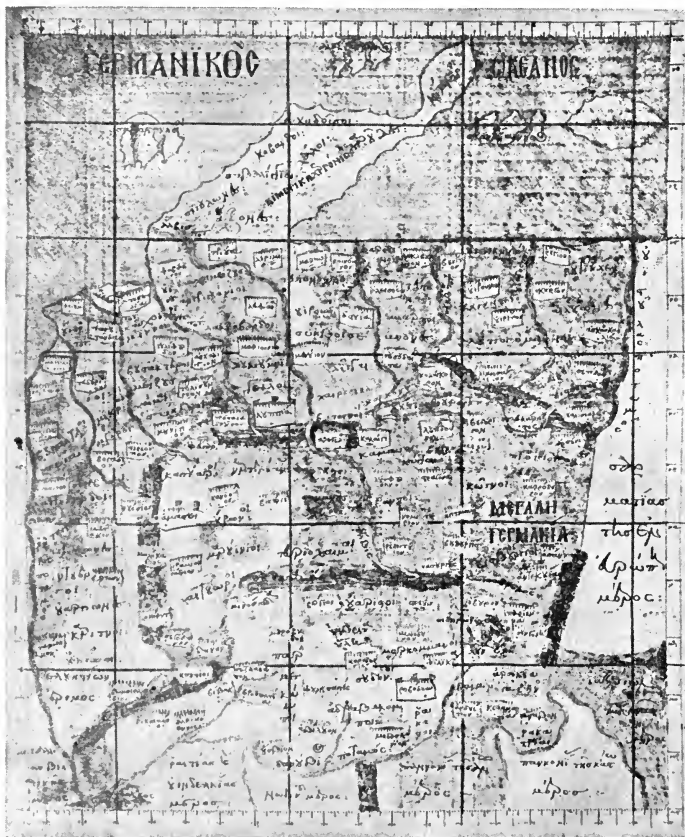


Fig. 3.
GERMANIA, CHERSONESUS CIMBRICA, SCANDIA
Version B

from the Codex Burney 111, fol. 28, in the British Museum, 13th century.

By permission of the Museum and "The Scottish Geographical Magazine". Cf. § 11—20.

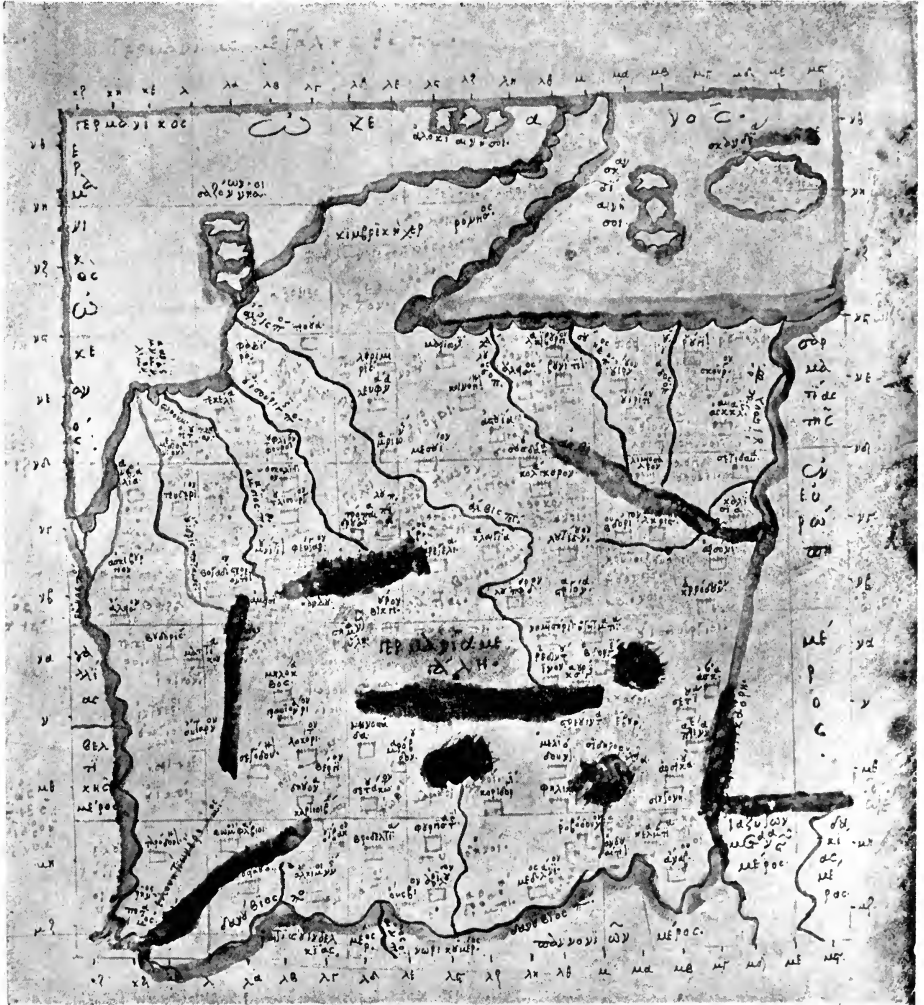


Fig. 4.

GERMANIA, CHERSONESUS CIMBRICA, SCANDIA

The type of the Roman editions

from the Codex Ebnerianus (Lat.) in the New York Public Library
 designed by Nicolaus Donis, 15th century.

By permission of Prof. Jos. Fischer S. J. ("Catholic Historical Records and Studies",
 New York, 1913, p. 222—223). Cf. § 19—20.



Fig. 5.

PROTOTYPE \dot{A} — GERMANIA

designed by L. Schmidt, in Seeliger's "Hist. Vierteljahrschrift", 1902, p. 84.

By permission. Cf. § 19.

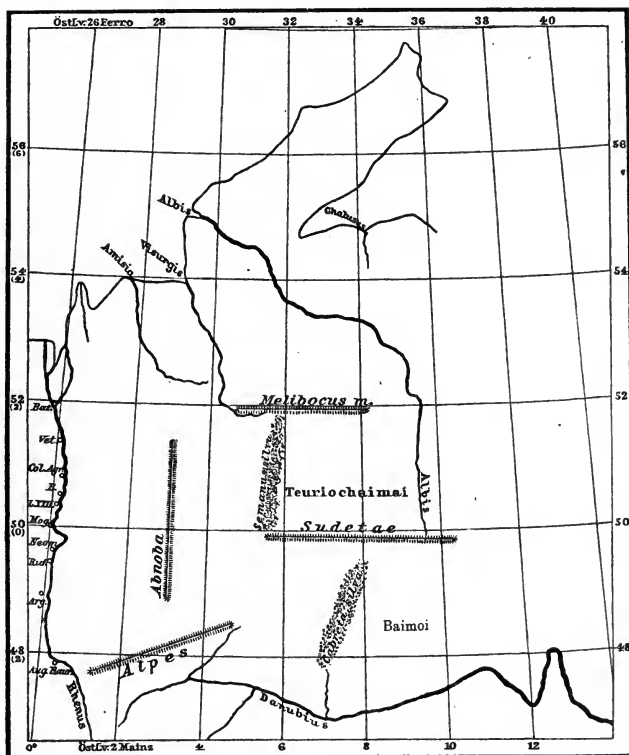


Fig. 8.
 PROTOTYPE *Ab* — SOUTH-WESTERN GERMANIA
 from the Codex Urbinas 82.

By permission of Prof. Jos. Fischer S. J. and "The Scottish Geographical Magazine".
 Cf. § 21.

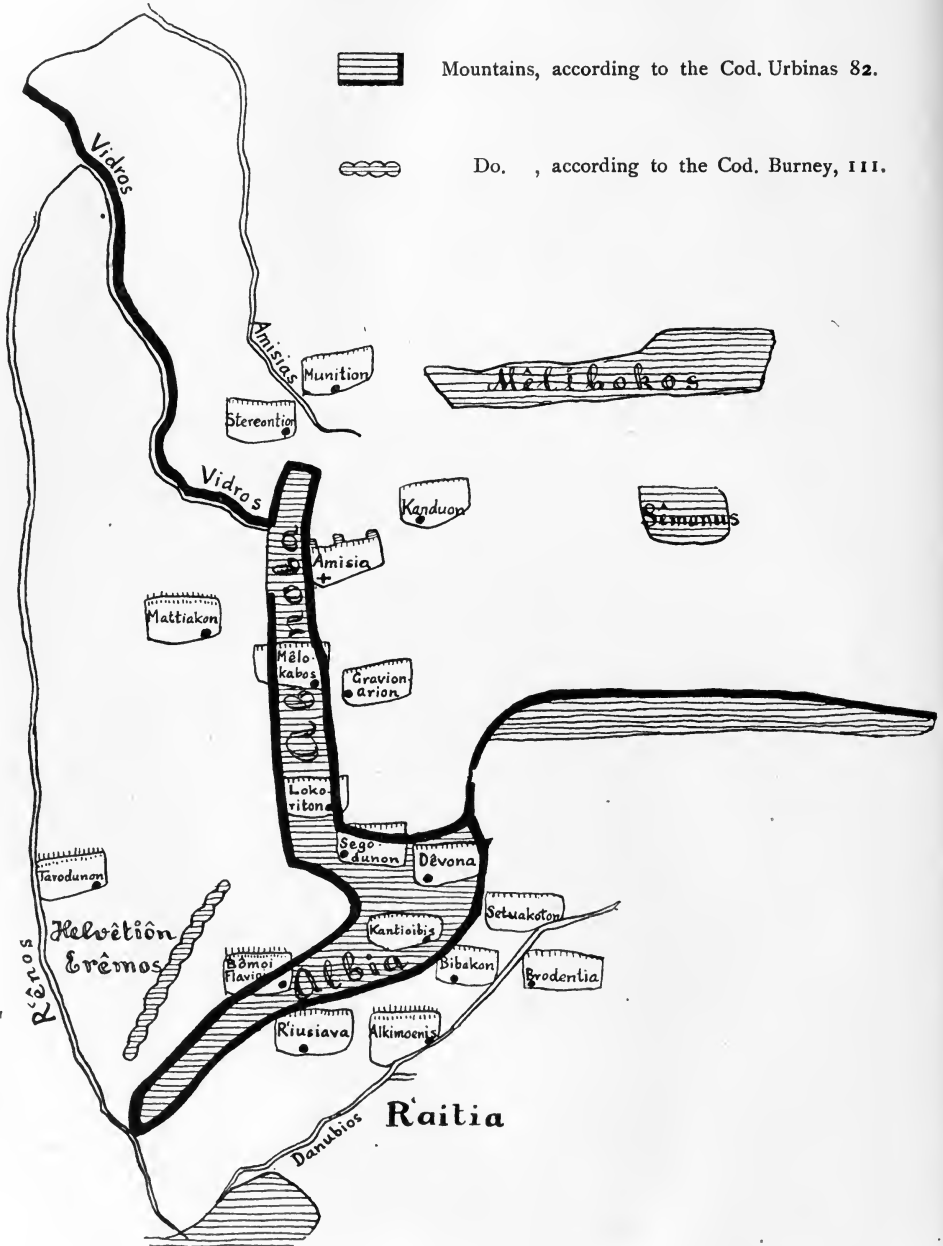
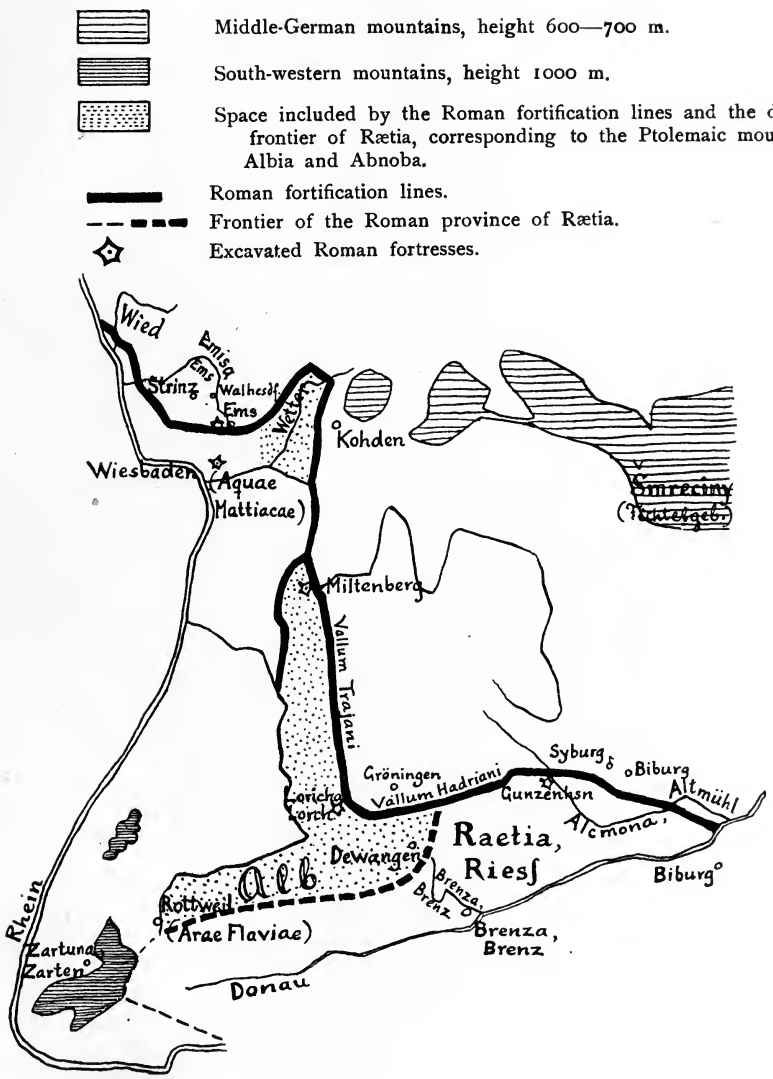


Fig. 9.
THE LIMES TRANSRHENANUS.

By permission of "The Scottish Geographical Magazine". Cf. § 21.



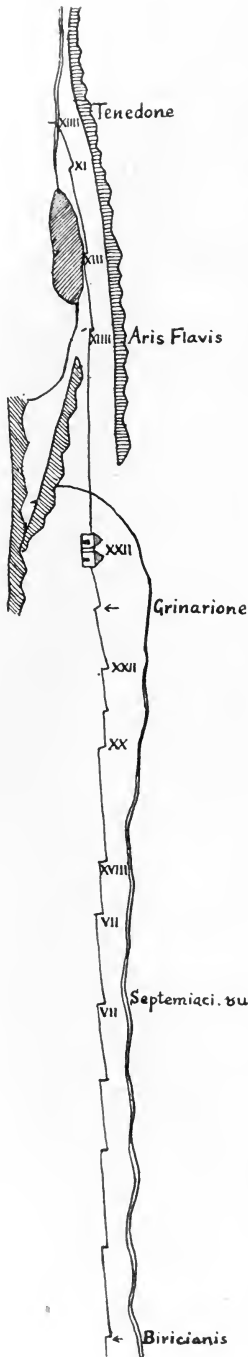


Fig. 10.

SOUTH-WESTERN GERMANIA

according to the Tabula Peutingeriana.

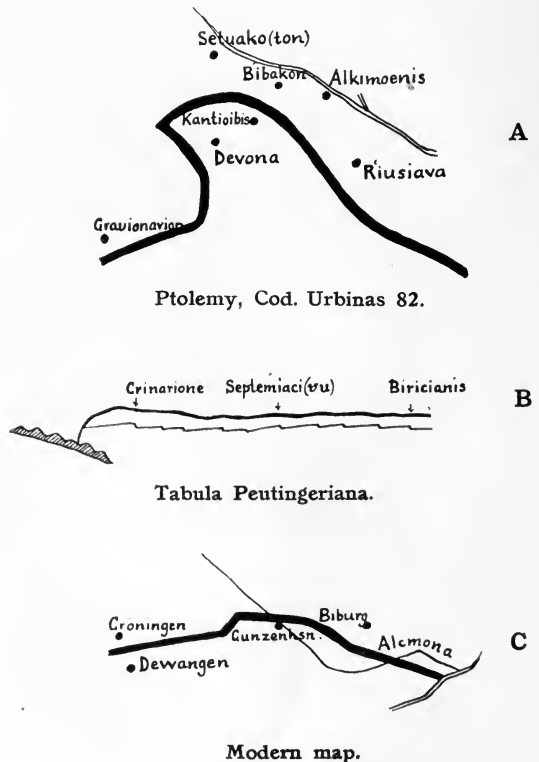
By permission of "The Scottish Geographical Magazine".
Cf. § 21.

The Latin figures are road distances and indicate towns which belong to the Roman Limes district between the Rhine and the Danube.

Fig. 11.

COMPARISON OF DETAILS FROM THE REGION OF THE VALLUM HADRIANI.

By permission of "The Scottish Geographical Magazine".
Cf. § 21.



Ptolemy, Cod. Urbinas 82.

Tabula Peutingeriana.

Modern map.

Fig. 12. DACIA
from the Cod. Urbinas 82.

By permission of Prof. Jos. Fischer S. J. Cf. § 27.

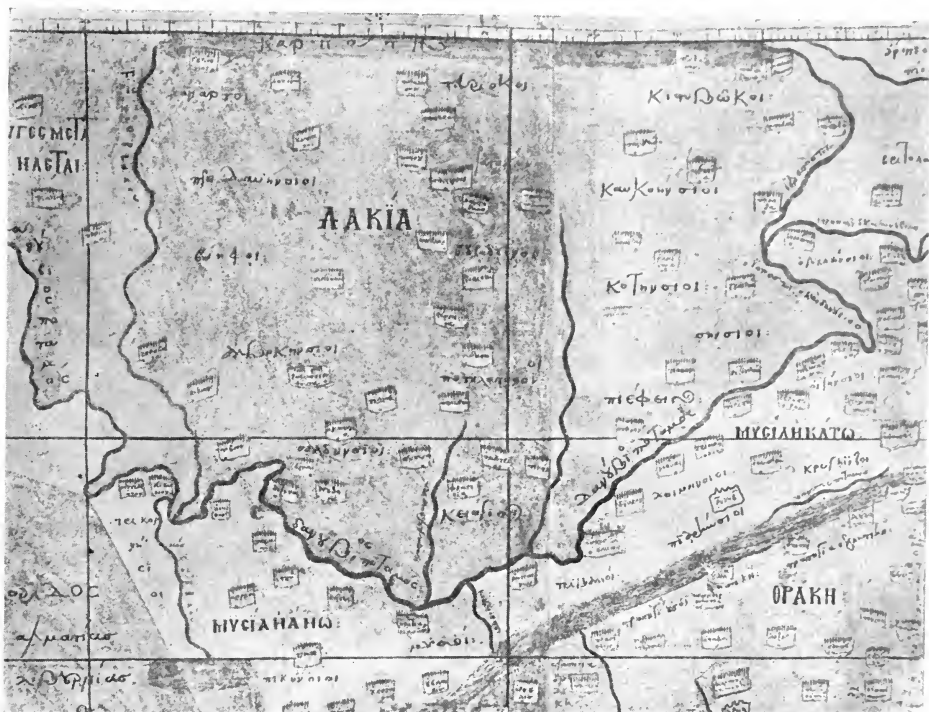
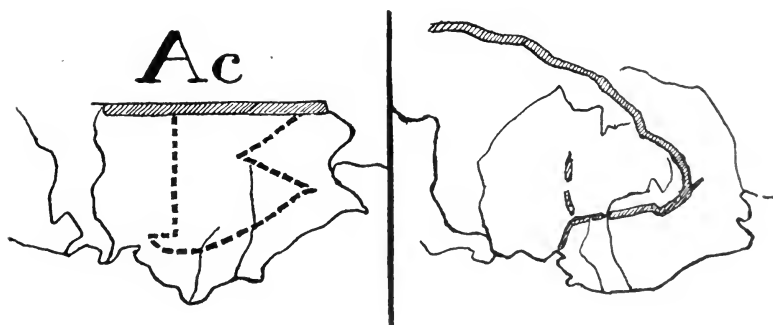


Fig. 13. PROTOTYPE *Ac* — DACIA

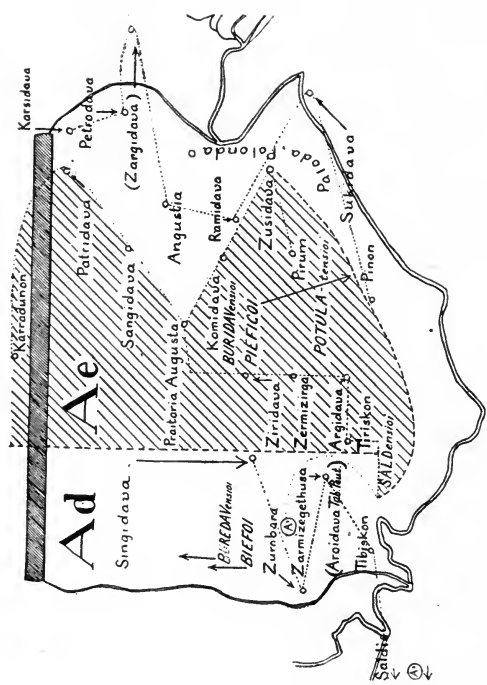
(to left), contrasted with a modern physical map of the region of the Lower Danube (to right).

By permission of "The Scottish Geographical Magazine". Cf. § 22.



■■■■■ marks the Limit of Prototype *Ac*, coinciding with the presumed southern Carpathian complex of *Ac*.

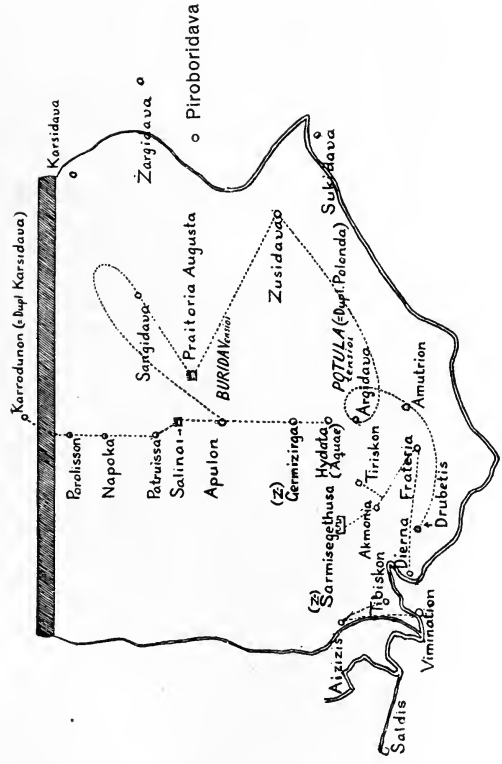
Fig. 14.
PROTOTYPES *Ad* AND *Ae* = DACIA.
 Comparison of the duplicates.
 By permission of "The Scottish Geographical Magazine". Cf. § 22.



- (A) → = the direction towards Alvona in Istria, possibly belonging to *Ad*.
- (A) = the place of the Albonsioi (*Albonensioi), possibly belonging to *Ae*.

Fig. 15. THE PTOLEMAIC TOWNS OF DACIA re-appearing on the Tabula Peutingeriana.

By permission of "The Scottish Geographical Magazine". Cf. § 22.



(Loci Ve Regis) Dac. Petoportiani

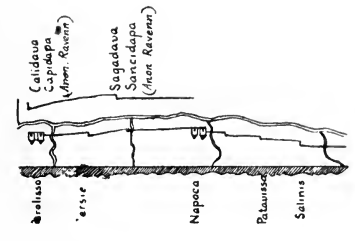
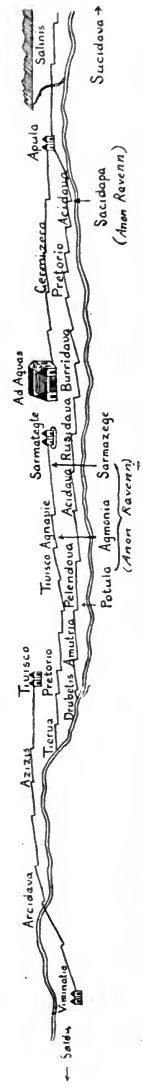


Fig. 16. DACIA

according to the Tabula Peutingeriana.

By permission of "The Scottish Geographical Magazine". Cf. § 22.



The eastern part of the map is shifted from the horizontal to the vertical position.

Fig. 17.
THE PTOLEMAIC DACIA

with the names redistributed according to their presumed correct positions.



Names without brackets or in a single bracket () are supposed to represent Ptolemy's prototypes *Ac*, *Ad*, and *Ae*. Those within square brackets [] are names from the Tabula Peutingeriana; those within double brackets (()) are names from Ptolemy's map of Germania or from other sources.

..... Mercantile road, from Carnuntum to Askaukalis, corresponding to Ptolemy's so-called "river Vistula".

Fig. 18. SURVIVING ANCIENT NAMES IN DACIA.
 By permission of "The Scottish Geographical Magazine". Cf. § 11.

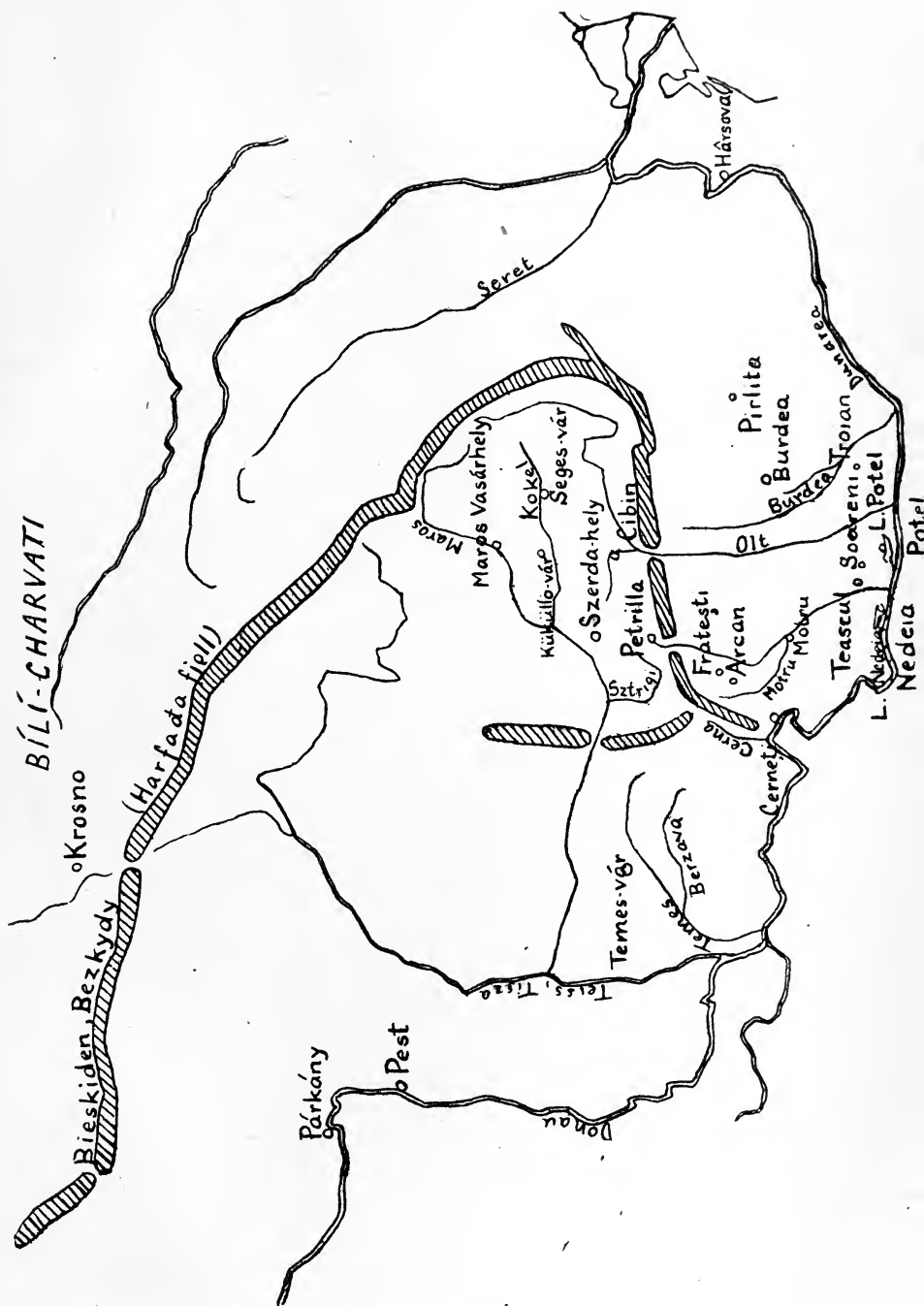


Fig. 19.
 PROTOTYPES B1 AND B2 — THE MERCANTILE ROAD FROM
 THE DANUBE TO THE MOUTH OF THE VISTULA.

Comparison of the duplicates.

By permission of "The Scottish Geographical Magazine". Cf. § 23.

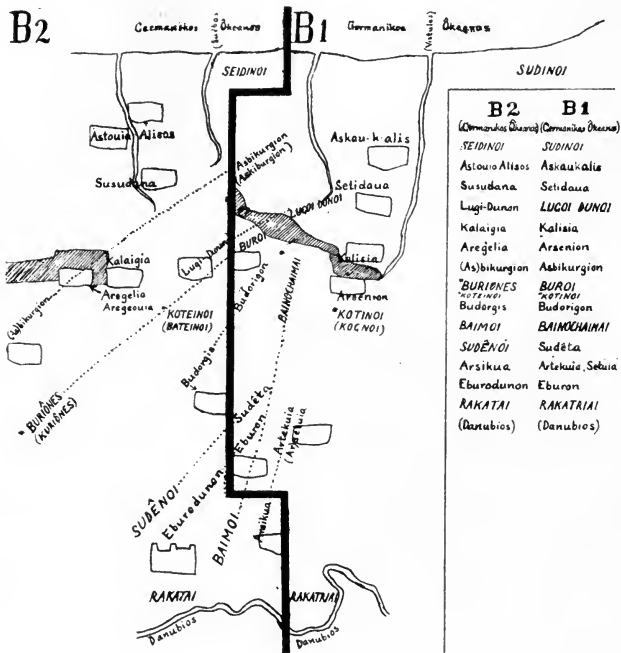
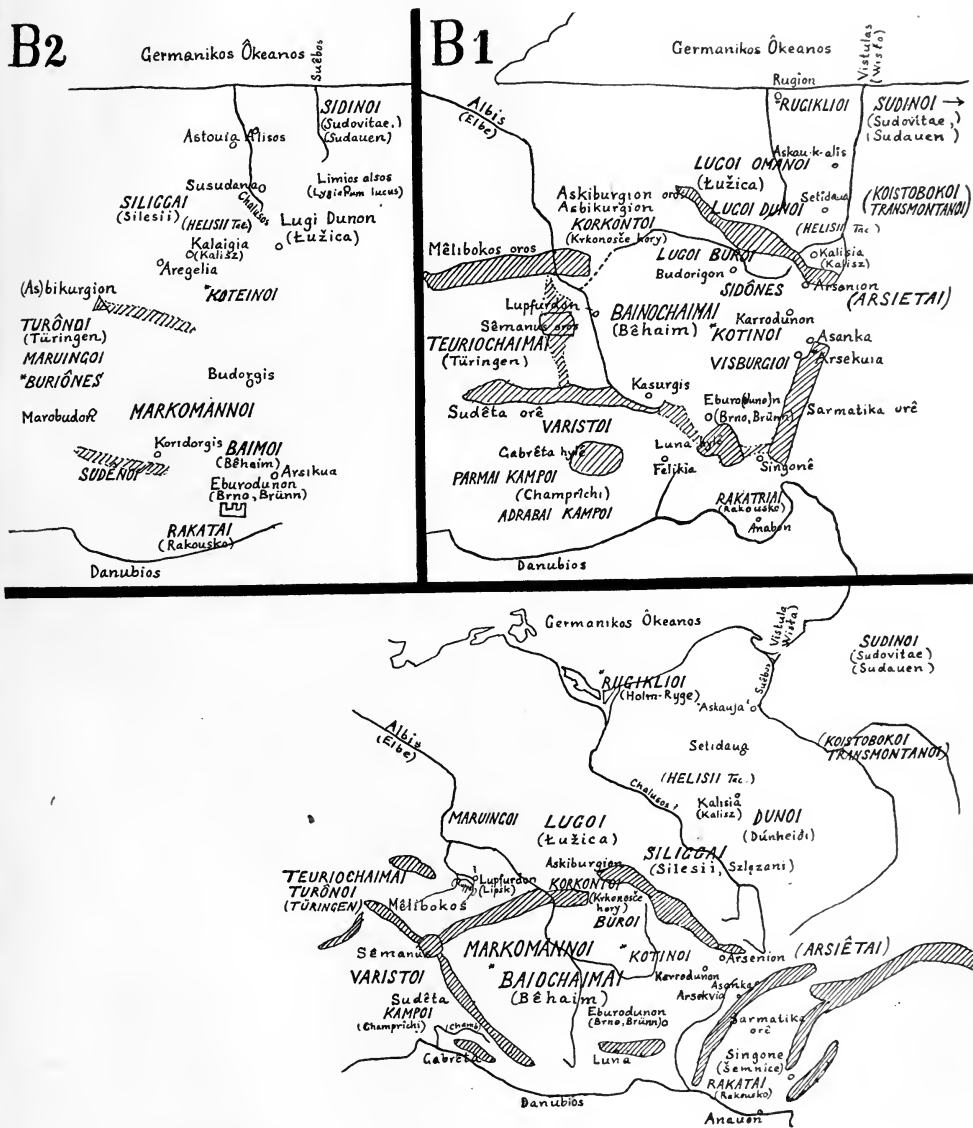


Fig. 20.
PROTOTYPES B1 AND B2
 contrasted with a modern map.

By permission of "The Scottish Geographical Magazine". Cf. § 12.

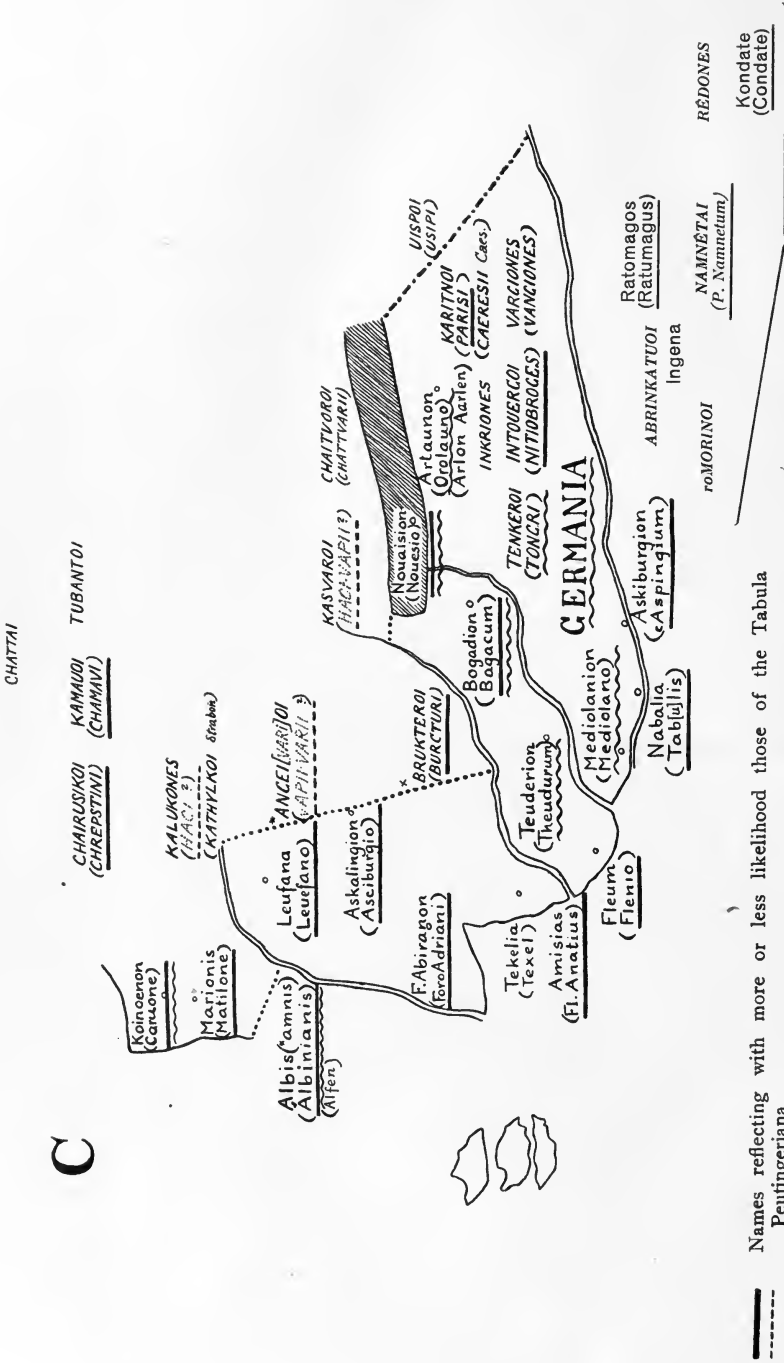


(in B2). Mountains, misinterpreted as a tribe or a town.

PROTOTYPE C — WESTERN GAUL, BELGIUM, AND NORTH-WESTERN GERMANIA.

Fig. 21.

Cf. § 24.



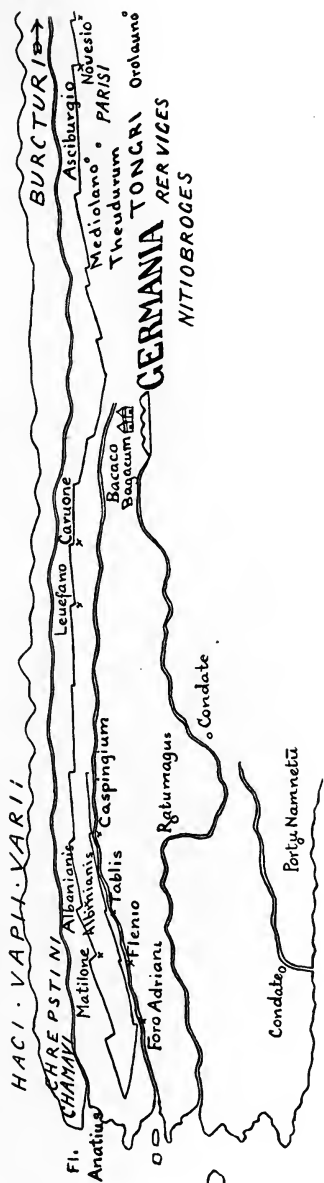
Names reflecting with more or less likelihood those of the Tabula Peutingeriana.

Names re-appearing in the Itinerarium Antonini.

The Lower Rhine of Prot. C; on the Ptolemaic map perhaps identified with the Roman frontier between the rivers Elbe and Ems, 9—47 A. D.

The Middle Rhine of C = the Ptolemaic mountain Abnoba.

Fig. 22.
BELGIUM
according to the Tabula Peutingeriana.
Cf. § 24.



Names with back-hand letters are added from the corresponding routes in the Itinerarium Antonini.

Fig. 23.
ANCIENT BELGIUM AND NORTH-WESTERN GERMANIA
with the names from Prot. C.

Cf. § 24.

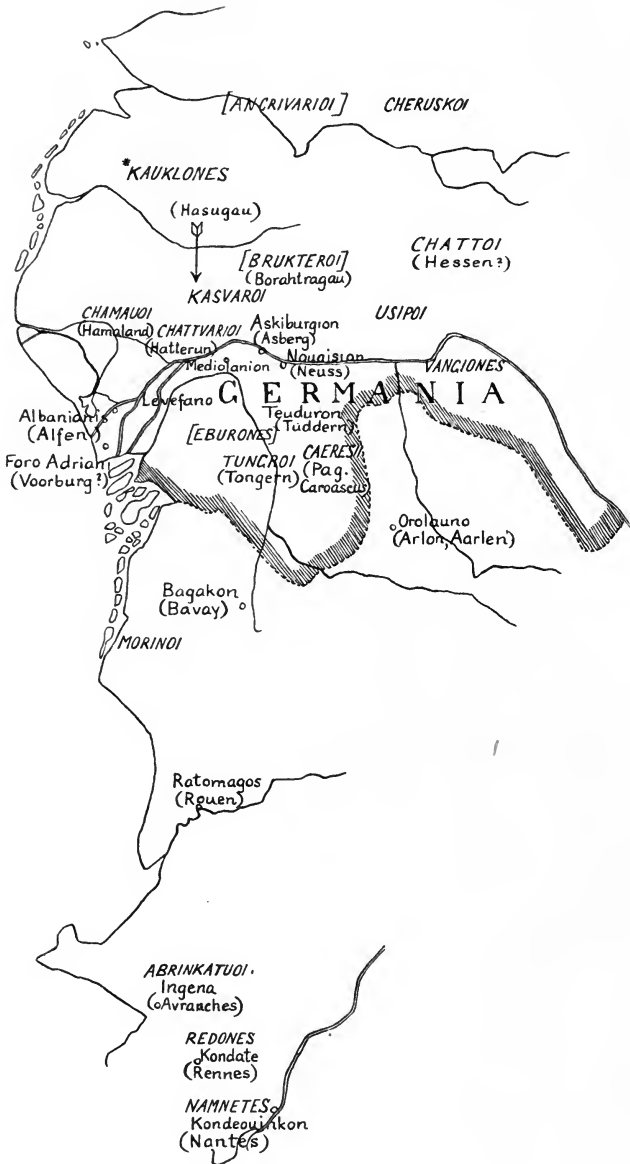
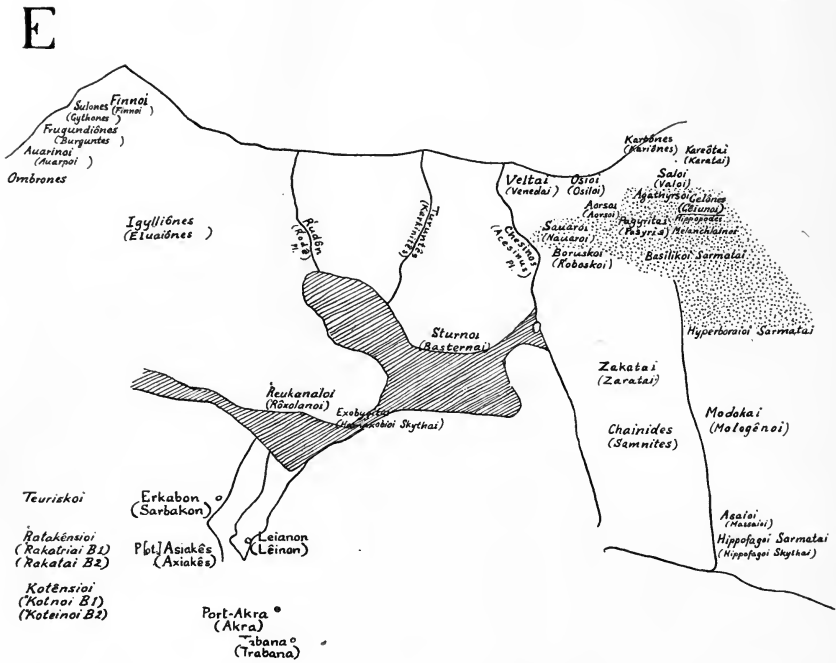


Fig. 25.
PROTOTYPE E

from the Cod. Urbinas 82.

By permission of "The Scottish Geographical Magazine". Cf. § 26.



Names in brackets, without addition of *B* or *Pl.*, belong to Prot. *F*.

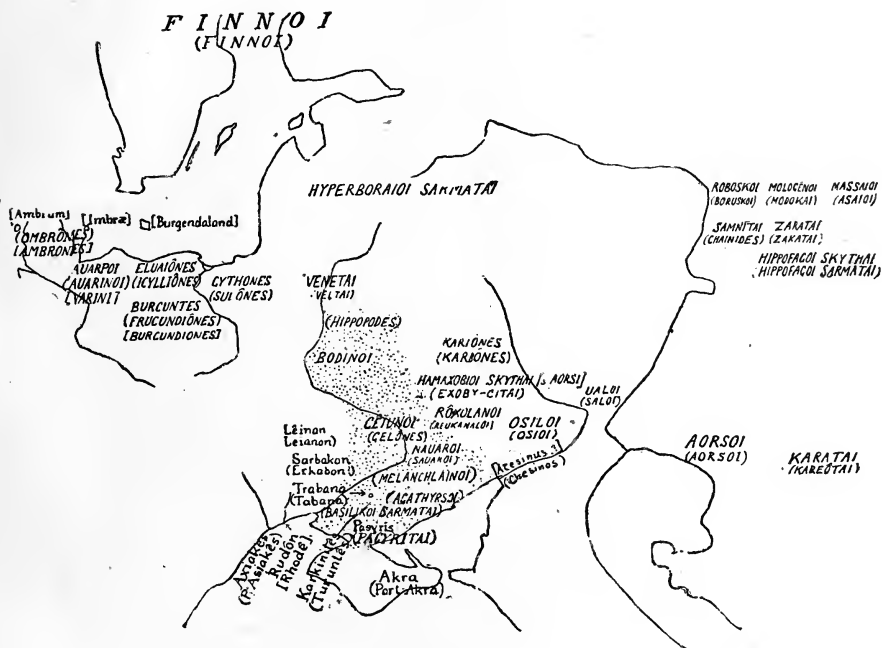
▨ The area of antiquated names, borrowed from Herodotus.

▨ Mountains.

Fig. 26.
NORTH-EASTERN GERMANIA AND WESTERN SARMATIA

with the names from the prototypes *E* and *F*.

Cf. § 26.



Names in brackets belong to Prot. *E*.

Names without brackets belong to Prot. *F*.

Names in square brackets are added from other sources (especially Pliny).

..... The area of antiquated names, borrowed from Herodotus.

Fig. 27.
 PROTOTYPE Sk — SCANDIA.

Cf. § 27.

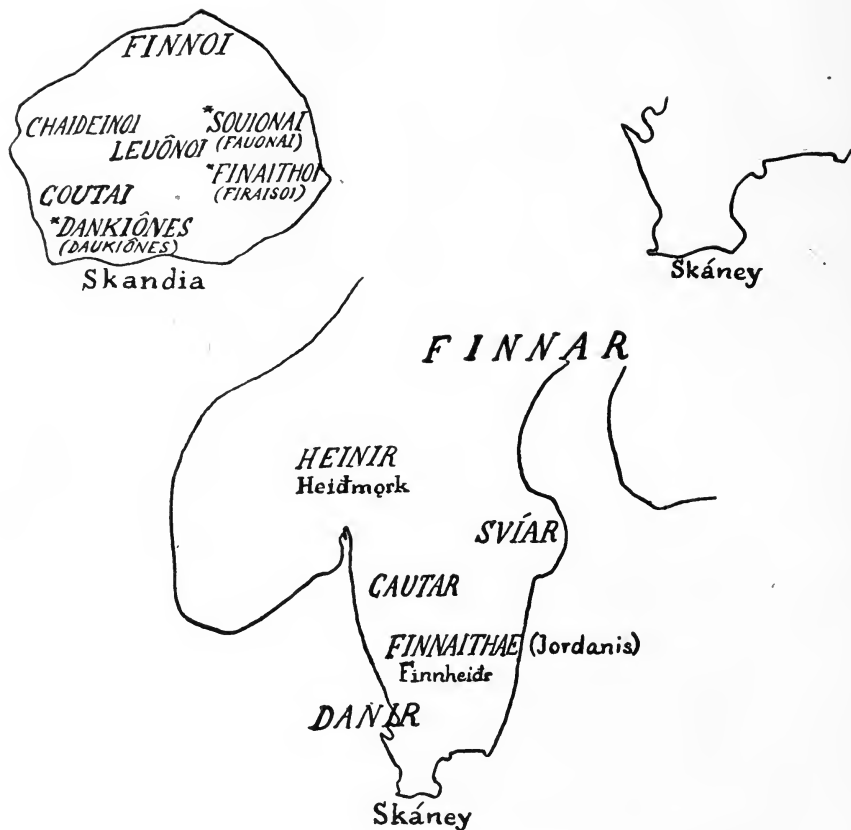
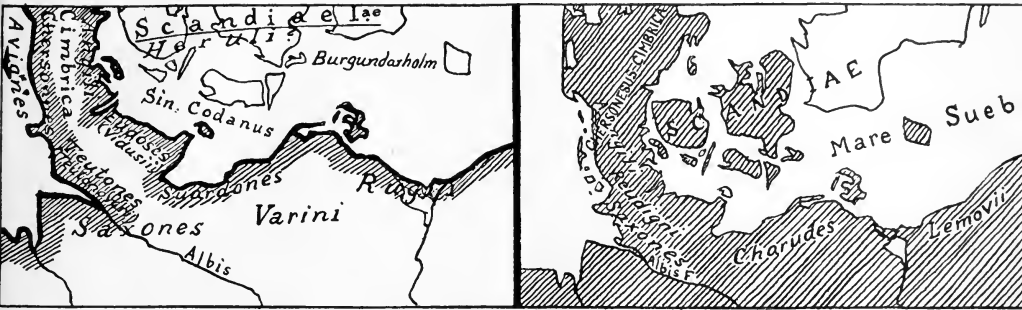


Fig. 28.

THE DEMARCATION OF GERMANIA

according to some modern representations, compared with the Ptolemaic map.

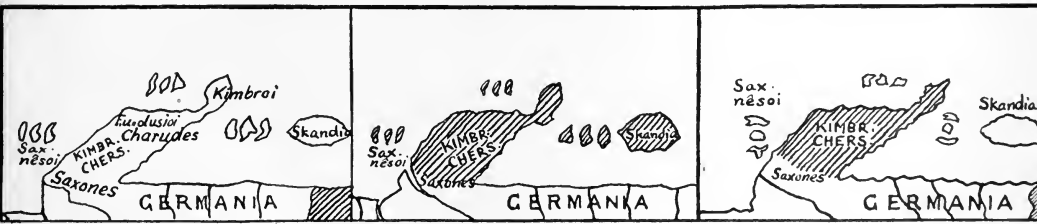


Perthes' Atlas antiquus des. by A. van Kampen.
1892. 9th edition. 1916.

K. Wolff, Germania. Meyer's Konversationslexikon.
6th edition. 1907.

THE PTOLEMAIC MAP OF GERMANIA

according to some 13th century MSS.



Cod. Urbinas 82.
Version A.

Cod. Athous Vatopediensis.
Version A.

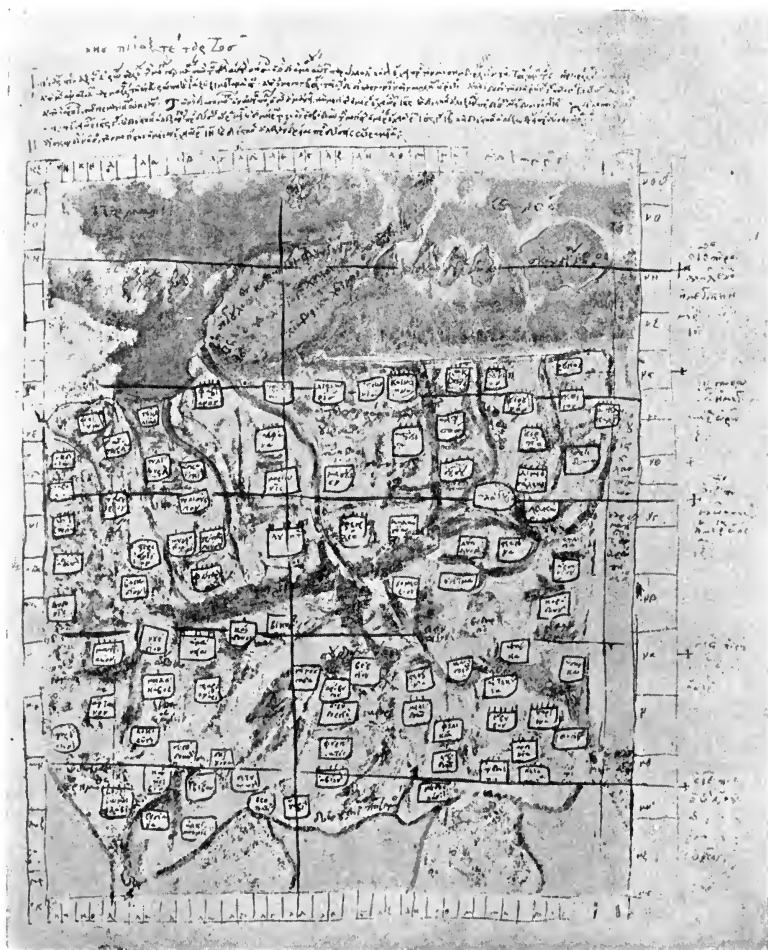
Cod. Burney 111.
Version B.

Fig. 29.

GERMANIA, CHERSONESUS CIMBRICA, SCANDIA.

from the Codex Athous Vatopediensis, 13th century.

By permission of The Danish Geographical Society. Cf. § 28.



LISTS OF NAMES DENOTING THE VARIOUS NATIONAL TYPES,
 APPEARING ON FIGURES 30 & 31.

Gothonic. Sound *ch*: Charudes, Kauchoi, Chamaoui, Bainochaimai, Teuriochaimai, Chalusos.

Termination *-is*; Lirimiris, Marionis, Albis, Visurgis, (Amisis Mela = Amisias Ptol.), Marnamanis, Budoris, Kantioibis, Alkimoenis, Furgisatis, Kasurgis, Budorgis (duplicate of Budoris?), Limis, Askaukalis(?).

Element *-bergion, -burgion*, "borough, barrow, mountain": Bergion, Askiburgion (town and mountain), Teutiburgion (town and *mountain); *-bôkos*, "beech": Mêlibôkos; *-chaim*, "home": Bainochaimai, Teuriochaimai; *-man*, "men": Markomanoi; *-vario*, "men": Angrivarioi.

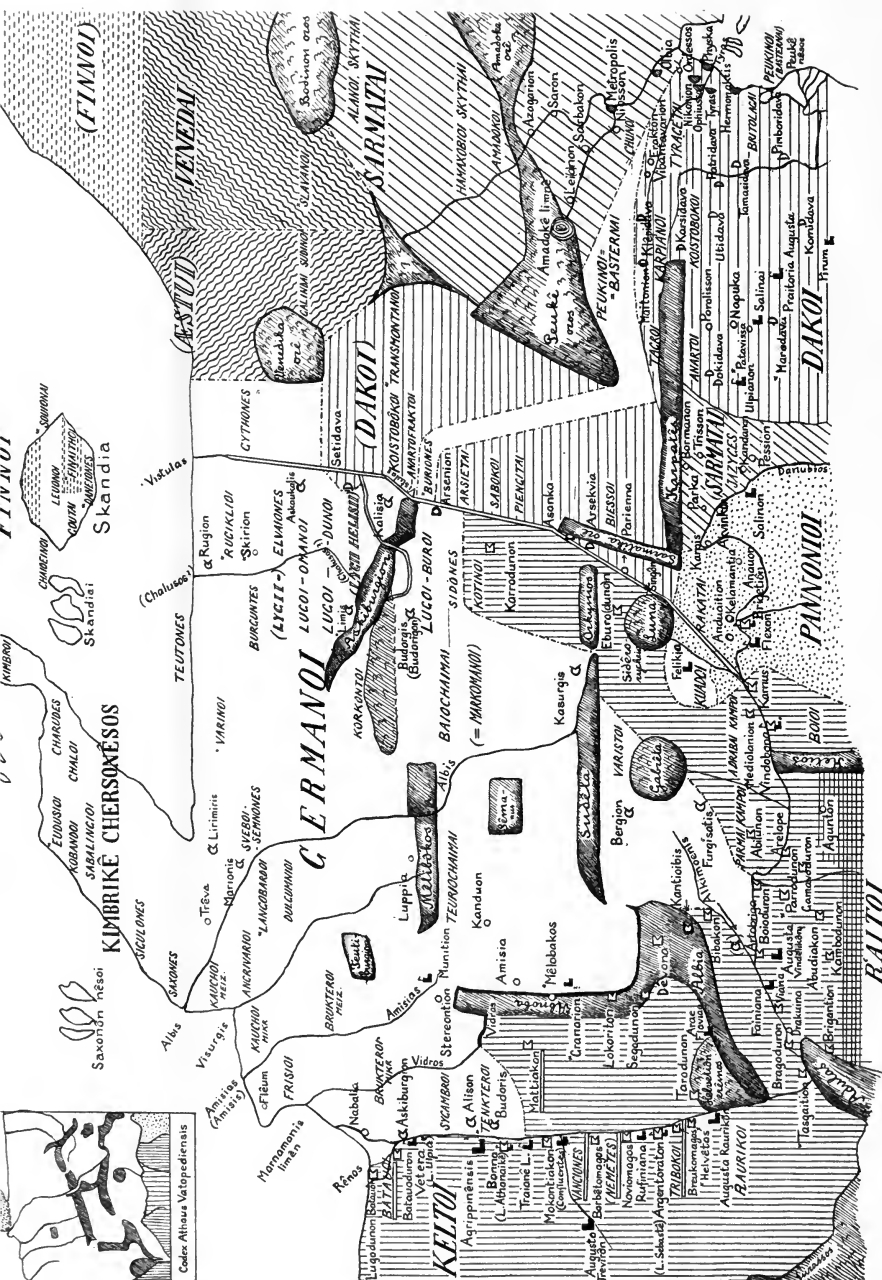
Celtic. Termination *-ak*: Mattiakon, Mokontiakon, Bibakon; *-et*: Sudeta, Gabreta, Nemetes.

Element *-briga*, "borough": Artobriga; *-dunon*, "town": Lugodunon, Tarodunon, Segodunon, Eburodunon, Karrodunon, Noviodunon; *-duron*, "water": Batauoduron, Bragoduron, Boioduron; *-magos*, "plain": Borbetomagos, Noviomagos, Breukomagos; *-lanion*, "place": Mediolanion; *-riton*, "ford": Lokoriton; *-carnon*, "horn, rock": Karnus (Carnuntum).














Pannonian. Sounds *kv* unaltered: Arsekvia, Akvinkon. (Gothonic alters *kw* into *hw, w, f*, etc., whereas *p* appears in continental Celtic and Dacian).

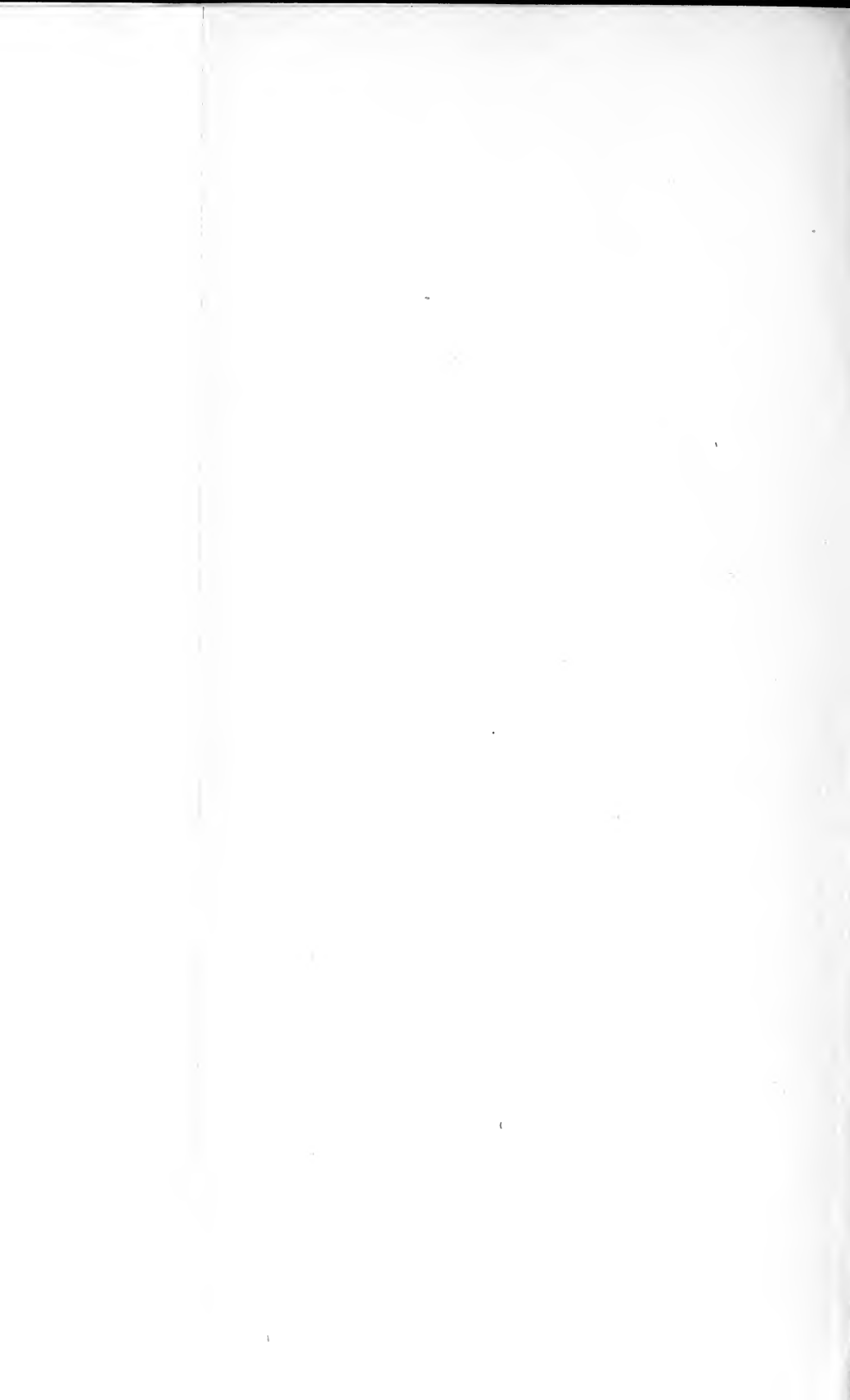
Dacian. Element *-dava*, "town": Setidava, Piroboridava, etc.

Scythian. Termination *-ss* (ç: š, sh): Pession, Trisson, Niosson; *-an*: Alanoi, Leianon, Kandanon, Bormanon.



Cf. Fig. 31.

-  Goths denationalized
-  Celts
-  Roman garrisons
-  Mercantile roads
-  Retians
-  Roman colonies
-  Pannonians
-  Lithu-Prussians
-  Slavs
-  Scythians
-  Dacians
-  Finns
-  Greeks



MAPS.

- Fig. 1. General Synopsis.
- 2—4. Germania, Chersonesus Cimbrica, Scandia.
 - 5. Germania, Prototype *A*.
 - 6. Chersonesus Cimbrica and Scandia.
 - 7. North-western Germania, Chersonesus Cimbrica and Scandia.
 - 8—11. South-western Germania.
 - 12—18. Dacia.
 - 19—20. The Mercantile Road from the Danube to the Mouth of the Vistula.
 - 21—23. Belgium and North-western Germania.
 - 24—26. North-eastern Germania and Sarmatia.
 - 27. Scandia.
 - 28—29. The Demarcation of Germania.
 - 30. A Rectified Ptolemaic Map of Nationalities.
 - 31. A Reconstructed Map of Nationalities. With lists of names denoting the various national types (p. XXIX).
-

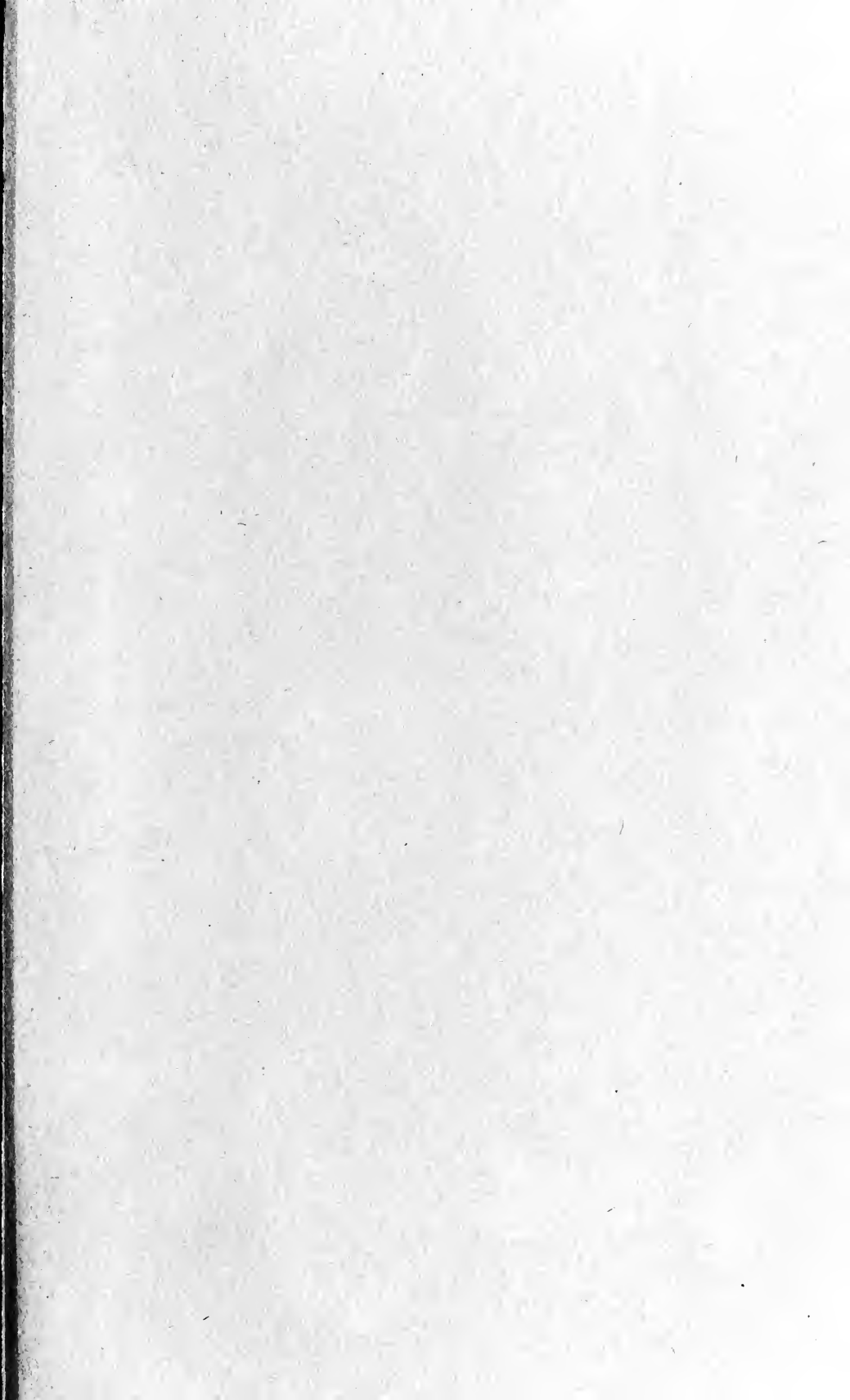
ERRATA

P. 145, § 34. First line; 1484, read: 1482.
Third line; 1490, read: 1478, 1490.

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